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The purpose of this conference was to bring expertise in the field of technical education to bear upon the identification and resolution of problems inhibiting the expansion of programs at the junior college level. Sixty-four participants were involved. The conference focused upon the relationships of technical education to: society, college administration, curriculum and instruction, and student personnel services. The first four papers presented are: "Technical Education and Society" by Edmund J. Gleazer, "Technical Education and Administration" by F. Parker Wilber, "Curriculum and Instruction in Technical Fields" by Norman C. Harris, and "Student Personnel Services for Technical Education" by Clyde E. Blocker. "Reactions, Recommendations, and Research Proposals" for each of these four papers were presented respectively by Robert E. Kisinger, Vernon L. Hendrix, Michael Brick, and Ken August Brunner. Other papers include: "Technical Education and the U.S. Office of Education: Conference Implications" by David Bushnell, "The Midwest Technical Education Center" by Douglas F. Libby, and "American Association of Junior Colleges' Occupational Education Project" by Kenneth C. Skaggs. (JK)

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EMPHASIS

TECHNICAL EDUCATION

Conference Report

Sponsored by

MIDWEST TECHNICAL EDUCATION CENTER

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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FOREWORD

The field of technical education represents a topic that is at the same time both promising and perplexing. It is promising because of the tremendous need for technically trained personnel in a society involved in the throes of accelerating technological revolution. It is promising because of the desire of the rapidly growing junior college movement to share in the responsibility for meeting the needs of an automated society. At the same time it is perplexing due to the fact that many junior colleges are experiencing difficulties in initiating new programs and in maintaining those already in existence at an appropriate level of efficiency.

There is a need for all the expertise that the field of technical education has developed to be brought to bear on the identification and resolution of problems inhibiting the expansion of programs at the junior college level. In response to this need, the Midwest Technical Education Center in cooperation with the American Association of Junior Colleges convened a national invitational conference of those involved in positions of leadership in the field of technical education at the junior college, university, state and national levels.

To assist in planning the conference, a group consisting of MTEC staff members, Kenneth Skaggs representing AAJC, Kenneth Brunner, Norman Harris, Robert Kinsinger and F. Parker Wilber participated in a planning session on February 4, 1966 at which time the following objectives were outlined:

(1) To take a major step in the direction of confronting and resolving problems being faced by junior colleges in the field of technical education.

(2) To identify and bring together from across the country a group of outstanding leaders in the field of technical education so that colleges might know to whom they could turn for assistance with problems involving development and evaluation.

(3) To inform educational leadership at all levels of the outcomes of the conference and of available resource agencies in the field of technical education.

(4) To focus attention upon the junior college as a leader in meeting the nation's technical manpower requirements so that both private and federal agencies would increasingly place their resources at the disposal of such institutions to assist them in their efforts.

The organizational framework for the conference provided for the identification of issues relating to four broad areas involving respectively the relationship of technical education to (1) Society, (2) College Administration, (3) Curriculum and Instruction and (4) Student Personnel Services. A nationally recognized authority was asked to deal with each major area. The edited versions of their manuscripts along with a report of discussion and reactions of those attending the conference constitute the body of this manuscript.

This report is published with the hope that the same sense of urgency and of high purpose which imbued those in attendance at the conference may be preserved and shared on a national basis with those whose interest and enlightened leadership are critical to the expansion and improvement of technical education.

The support of the Carnegie Foundation in making this conference possible is gratefully acknowledged.

Richard C. Richardson, Jr.
Editor

TECHNICAL EDUCATION AND SOCIETY

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Ask almost any professional in the field of community college education what bothers him most and he will tell you that it is the low prestige value or lack of acceptance of technical education. In this country and in many countries abroad the university with its baccalaureate programs is the desired educational objective. Technical programs are chosen often reluctantly as second best options. In 1963-1964 sixty students from Kenya were brought to this country under a program by the African-American Institute and the American Association of Junior Colleges with support from the Agency for International Development. They enrolled in occupational programs in junior colleges in New York State and Southern California and returned home after two years to take up the jobs for which they were trained. A large number of the students wanted to change their previous commitment and go on to a four-year program. And you couldn't blame them, because the society in which they lived had not established a place of prestige for the graduate of these two-year programs. Our culture has demonstrated the same reluctance.

The fact of the matter is that the vast potential of the community college is not being fully used in the field of technical education. The purpose of this paper is to deal with the problems and inhibiting factors that transcend the local institution being rather a part of the social context in which the institutions function. While an exhaustive examination of all such problems would require far more space than the scope of this paper permits, it seems essential to deal with the following four major issues:

1 - How can social attitudes concerning technical education be improved? Or to put it another way - How can the prestige level of technical education be raised?

2 - How can technical education be made responsive to a rapidly changing society?

3 - How can the potential users of technicians be moved to utilize them effectively?

4 - How can those in the field of technical education communicate better with the broader field of education, government, business, industry, labor, and the professions?

Attitudes Toward Technical Education

Recently community colleges have been established in large cities. It had been expected that many students from underprivileged families would enroll in occupational programs. The results have been disappointing because these students who wish with such fervor to move up the economic and social ladder are not convinced that the occupational or technical routes facilitate their progress.

Terminology has often been responsible for downgrading of technical education. Familiar phrases to this group are "less than college-grade" - "less than degree length." People, particularly young people, appear to have some antipathy toward something which is described as "less than."

The United States Office of Education has not included persons enrolled in occupational programs in its annual fall enrollment figures nor has it counted persons who have received the associate degree in its statistics of degrees conferred. Such procedures convey, intentionally or not, the view that occupational programs which do not lead to the bachelor's degree are not part of the higher education enterprise.

And have you ever heard a remark like this one - "John is not a strong student. An occupational program is about as much as he can handle." Differentiation between occupational and transfer students appears to rest upon whether they are weak or strong students. The student who does not intend to transfer to a four-year institution gets the impression that he is of lesser ability and carries a stigma of incomplete or inferior.

How many high school counselors discuss with their students the appropriateness of technical programs in the community college? Is not the "quality" of the high school and incidentally of the counselor often thought to be judged in terms of the number of students who move into four-year programs in traditional colleges?

College and university representatives visit high schools to recruit students. Are these prospective students given information about the advantages, the rewards, the values, of technical or occupational curricula in community colleges which lead directly to employment?

How many foundations have established scholarship programs for outstanding students in technical fields similar to the MA3 program of Ford Foundation or the Woodrow Wilson fellowship program? What foundation or government supported program for either the student or for teachers in these fields has given indication that the leadership personnel of either government or the foundation is convinced that these fields of study are important. There is still some truth to the adage that where your treasure is there will your heart be also. Up to this date the treasure has not been evident and the question is naturally raised as to the inclinations of our society's heart.

By what actions have leading national associations in education indicated high value judgments of technical education? The American Council on Education took its first step in this direction with the commissioning of the Grant Venn study. The National Commission on Accrediting has encouraged a study of specialized accreditation as it affects occupational education. These are but two examples which come to mind of efforts by the national educational establishment to recognize and dignify the field of occupational education.

And one other illustration of the problem of the stereotype of college attendance as it relates to the suitability of occupational programs for many students may be added. The Advertising Council's long time public service effort to motivate people to give to the college of their choice was of necessity broadly representative of the college community. But the picture which was indelibly formed in the minds of the millions who heard or saw the constant reminders of the need for colleges in our society was the four-year institution. The baccalaureate offerings came through as the desirable goal. No reference was made to the fact that for perhaps two-thirds of the high school graduates an associate degree was a more appropriate initial objective.

What has been done about this problem nationally? Under a grant from the W. K. Kellogg Foundation, a National Advisory Committee to AAJC was established in 1962. The membership included several national leaders in business, industry, education, labor, and government. The first problem to which the committee chose to give its attention is the one we are discussing. As a result of its work a statement - A National Resource for Occupational Education[1] was published and widely distributed. The work of the committee was terminated in 1965 after foundation commitments had ended.

Social attitudes can be changed. Changing circumstances can often change society's perceptions. A few years ago neither mathematicians nor astronomers had prestige in America. The computer, Cape Kennedy, and national security changed that. Foundation and government appropriations gave tangible evidence in the billions of dollars that not only these scientists of former dim luster but a thousand other kinds were essential to survival. And the message is driven home every time one of those birds in Florida or in California is launched.

Assuming that it is good public policy for a much higher proportion of America's high school graduates to enter occupational programs and that increasing the prestige of these fields will be a persuasive factor, I have these proposals to make:

1 - Stimulate through educational efforts with both high school and community college counselors the concept that the occupational program prepares for job entry. A lifelong commitment is not necessary to the field. Indeed education and training will be lifelong. Educational resources will be available when the

individual is ready for additional or changed training.

2 - Urge curriculum planners to devise open-ended broadly based programs so that the student can maneuver within his field as his interests and objectives change.

3 - Encourage national foundations to establish programs which recognize the worth of both the teacher and the student in technical fields. W. K. Kellogg Foundation and most recently Ford Foundation have taken steps in this direction. Ford Motor Company Fund has initiated a scholarship program for students in automotive technology. A multiplying of these commendable efforts is needed.

4 - Work with counselors so that they talk with students and teachers and parents in terms of different kinds of ability rather than gradations of ability. Some occupational programs require academic abilities quite similar to those required of the transfer liberal arts students. Others require capabilities in manipulative skills sometimes not possessed by the student who is strong in abstractness and verbal reasoning ability. There exists a spectrum of types of intelligence, aptitudes, capacity, motivations, interests, across the whole field of occupational programs as broad as that required for the variety of baccalaureate programs in the university. It is not accurate to think in terms of two categories with interchangeable titles, i.e., the good students viz. transfer students and the poor students viz. technical students. An avoidance of these pitfalls would do much to evaluate the social status of the occupational

student.

5 - Urge the United States Office of Education to recognize the validity of the associate degree as representing two years of collegiate level study which does not necessarily lead to transfer and a baccalaureate objective. Urge the Office to include students in organized occupational curricula in the fall enrollment figures as well as in the yearly reports. There are problems of comparability with data for previous years but technical difficulties should not be justification for continuing an error. Urge the Office to utilize terminology which recognized these programs as worthy in their own right. Eliminate definitions or terms which suggest that the baccalaureate program is the only point of reference.

6 - Encourage the American Council on Education through its program and commissions to recognize the social worth and the appropriateness of technical education through its Commission on Federal Relations, its Commission on Administrative Affairs, its Commission on Academic Affairs, and its Commission on International Affairs.

7 - Establish a program of public interpretation of the value of occupational programs in the community college. The stereotype of the four-year degree as an almost universal objective must be changed. For most high school graduates it is obviously not a desirable initial objective. A campaign through radio, the press, and TV similar to the Advertising Council's project with the Council for Financial Aid to Education is justified.

Making Technical Education Responsive to Changing Society

"A year from now you'll look back on these job specs and laugh." That was the bold face caption for a full-page ad by General Electric in the Washington Post a few weeks ago. Specialties were described under such job classifications (usually with sub-classifications) as:

circuit design
computer systems
simulation
programming
radar
information systems
underwater missiles systems
guidance systems
flight control
systems analysis
weapon systems
quality control
radar components
components
sonar
signal processing
optical
reliability
microwave
mechanical engineering
instrumentation
spectroscopy
field engineering
human factors
microbiology
biochemistry
bacteriology

These were the manpower needs of the General Electric Defense Electronics Division.

Other harbingers of rapid change are found in the recent issue of the Occupational Outlook Handbook along with indications that during the next ten years the fastest growing job field will be professional, technical and kindred occupations.

> "Personnel in these areas will be in sharp demand as the Nation explores new approaches to education, bends greater effort towards America's socio-economic progress, urban renewal, transportation, harnessing the ocean, enhancing the beauty of the land, and conquering outer space. Today, thousands of men and women are working in fields that were little known only a decade ago - cryogenics, bionics, ultrasonics, microelectronics. The quest for scientific and technological knowledge is bound to grow, thus sharply boosting the demand for both specialists and those who can function effectively in several fields. The next decade will see a new emphasis on the social sciences, and educational and medical services."[2]

The pace of change poses real problems for technical education. What are the manpower requirements five years from now - ten years from now? How can teachers be prepared, facilities planned, curricula developed, students counseled unless there can be better forecasts than now exist.

In a recent study of Student Personnel Programs[3] in junior colleges, Dr, Max Raines found that the weakest elements in the junior colleges with the best student personnel services were occupational counseling and placement services. Both of these represent points of contact with real life conditions in the employment fields. Such deficiencies strongly suggest that there is a lag between the educational experience of the student in the classroom or shop and the requirements of the job into which he is moving.

And one other clue to the existence of this critical problem can be supplied. Roger Garrison in a yearlong study of the junior college faculty member finds that the greatest concern of the teacher is that his "intellectual capital" is not being replenished. I am sure that this group would understand that teachers in the various technologies also need "intellectual capital." Some of this consists of a knowledge of the requirements, changes, concepts, personnel, and literature in the occupational field in which he is teaching. And the chances are that he is not able to keep up.

Some assistance has been developed but it has been limited. The National Science Foundation provides some summer institute programs. A few corporations have made it possible for teachers in some of the industrial technologies to have summer employment in their plants. But on the whole there has been no systematic, organized program by which the community college is kept tuned in on change in the occupational fields.

A word should be said for the value of advisory committees or councils. I had the privilege of addressing several hundred members of the advisory committees to the large number of occupational programs offered by Los Angeles Trade-Technical College. I was impressed by the evident identification with college programs ranging from plastics to chef training to aircraft mechanics.

I have these suggestions for action:

1 - Step up efforts to identify, recruit, and prepare administrative leadership for community colleges. The community college must be sensitized to its environment. A kind of perpetual inventory must be maintained of manpower needs and developments. But this is not a matter of knowledge alone. It is also a product of a posture, a point-of-view, sensitivity, and perception. There is required a high order of administrative ability to establish communication with the environment of the college as well as to see to the organization of a system of intelligence which will provide information necessary for indicated change.

2 - Greatly expand the few efforts now extant for identification, recruitment, and preparation of teachers in the occupational fields. Such activities should involve colleges or universities with graduate programs, community colleges, and the occupational community. The Junior College District of St. Louis-St. Louis County is initiating such a program under Ford

Foundation support. This Midwest Technical Education Center was established toward a similar end by the Carnegie Corporation. Kellogg Foundation has provided funds for teacher preparation in the health related fields. But all of these efforts to date are a token effort in the face of the need which exists. Not only are foundation funds needed, but the federal government should underwrite the preparation of thousands of the qualified teachers needed. Federal measures have been limited largely to graduate fellowship programs that move the teacher into university or college teaching or to qualifying the teacher for elementary and secondary teaching.

3 - Explore with the cooperation of occupational representatives the feasibility of expanding such programs as General Electric has had for some years in connection with Syracuse University. These summer institutes are designed to acquaint high school guidance personnel with actual conditions in industry. The GE plants at Electronics Park have been used so that the counselors get a realistic and up-to-date view of job requirements in this day of rapidly changing technology.

4 - Urge occupational groups (employers) to provide either summer school working opportunities or leave-of-absence jobs so that teachers in occupational education have frequent experience in the field for which they are preparing personnel.

5 - Work with occupational fields toward an arrangement similar to that of the visiting scientist under NSF funds whereby it is possible to arrange for a competent representative from an occupational field to spend two or three days or even a semester in residence at the institution or in visits to a series of institutions. This procedure has worked well with physicists, psychologists, chemists, etc. It would be equally helpful if it included representatives of employers in the semi-professional and technical fields.

6 - Encourage the Department of Labor to expand its services in regional and local manpower studies and to keep such information current and available to institutional planners.

7 - Greatly expand "work experience" programs. The community college, located as it usually is in a city, has a built-in asset in its proximity to the occupational life of the community. In some community colleges 60% of the students are working part-time. There are distinct advantages to their working at jobs related to their training. Good planning and coordination are required. However, not only are there distinct values to the student from the standpoint of on-the-job experience which gives realism and motivation to his work; there is the added value of assuring that the college program is tested daily in the actual work setting. We should give consideration to a dramatic increase in work experience programs.

How Can Potential Users of Technicians be Moved to Utilize Them?

We have been concerned that employers have demonstrated either reluctance to utilize technician personnel or have not known how they can be utilized. This situation is changing rapidly. Effective and efficient utilization of resources often is correlated with scarcity of those resources. The tremendous assignments ahead of society demand utilization of people in accordance with their training. The various health fields offer a vivid illustration of what will happen in other occupations. In a report to the American Association of Junior Colleges, Dr. Robert Kinsinger put it this way:

> "The lone practitioner of medicine is an anachronism, as is his counterpart in other professions. The knowledge explosion has overwhelmed the professional and escalated his responsibilities. Increasingly, he analyzes, plans, and administers services which are provided by others--others to whom he delegates in large measure routines carried out under his direction. The "others" are technicians and assistants. In medicine and dentistry, the list of supporting technicians is long. Some of the names are well known--such as medical laboratory technicians, x-ray technicians, opticians, inhalation therapy technicians, and dental hygenists. Others, many others, are doing the work, but their role as medical and dental assistants is less well developed. For some we even lack names. They not only assist the physician and the dentist, but, in this expanding field of knowledge and service, there is need for technical assistance for the professional nurse, the physical and occupational therapist, the medical record librarian, the dietician, and many others."[3]

The American Association of Junior Colleges has joined with the National Health Council which represents some 70 health agencies to further a close working relationship between health practitioners and educators in the junior college field and to facilitate and stimulate the development of education programs in the health and technological fields.

A short time ago I received a letter from the Executive Director of the American Society of Planning Officials expressing the view that semi-professional personnel were urgently needed.

> "In recent months the American Society of Planning Officials has received considerable evidence that local government agencies concerned with planning, housing, urban renewal, code enforcement, traffic and highways, environmental health and other urban problems, are in need of trained personnel to perform jobs at the semi-professional level. The need is particularly great in planning agencies....We would urge that as quickly as possible a project be gotten underway to inform junior colleges throughout the country of the enormous potential for career opportunities in planning and urban development offices, the types of skills required, and the suggested curriculum for this type of career. We are anxious to cooperate with you...."
>
> "A corollary need which we would like to give attention to as the project develops would be an analysis and identification of the variety of tasks that could be performed by semi-professional personnel (even though now performed by professionals) and preparation of "model" job descriptions, classifications, titles, and salary levels."

Under a grant by Sears-Roebuck Foundation, AAJC and ASPO co-sponsored a conference to begin joint explorations in the educational fields involved. Now the focus is broadening toward what might be described as an "Associate Degree in Urban Administration."

It is apparent that there has been a notable change in the employer's view of the semi-professional or technician as the pool of qualified manpower has shrunk in proportion to society's demand for services.

A final illustration may serve to drive the point home. A representative of the International Association of Chiefs of Police has told us that, because of the great pressures developing among law enforcement officers for upgrading, the community college is being looked to for assistance. AAJC is urged to join with IACP in bringing together the law enforcement agencies and junior college representatives to plan suitable educational programs.

Potential users of technicians are looking toward persons so trained with real hope. These appeals for help from employers represent a dramatic change from a period of a few years ago when it was difficult to stir up interest in the role of the technician. Now the question deals with their effective utilization.

Here are a few proposals for action. Incidentally, some former comments also will have relevance to this concern for utilization.

1 - Establish a working relationship with employers and their organizations. Dr. Robert Kinsinger hit the nail on the head in his recent report on technicians in the health fields when he said: "No project that hopes to propose and develop innovations in the health field can hope to reach its objectives without a working relationship with a number of these groups."[4] He was referring to the complex system of professional associations, organizations representing health service facilities, voluntary health groups, and federal agencies. Other occupational fields have similar systems of organization within which they function.

2 - Encourage training institutions to provide for working relationships between the professional and the technician in the training process. Montgomery Junior College in Maryland has had support from the United States Public Health Service for a program to prepare dental assistants. These trainees

have worked with the dental students at Georgetown University. Dentists graduating from that institution want dental assistants and know how to utilize them. Could these procedures be adapted to other fields?

3 - Establish well-organized work experience programs. Some advantages of this kind of educational experience have been mentioned. Additionally, the shared effort of institution and employer required will result in utilization of the technician along the lines of this training.

More Effective Communication with Education, Government, Business, Industry Labor, and the Professions......

We must not spend our time and energy taking up the cudgel to an enemy which may no longer exist. There are problems, as we have seen, but the pressure of the environment is forcing changes and a new strategy is needed to meet new conditions. It is clear that publicly supported educational opportunity for all in this country will soon include two additional years beyond high school. And as Frank Bowles of Ford Foundation has said recently this does not mean "more of the same. It is the process of increasing the capacity of an educational system by adding opportunities for study, to accommodate students who have heretofore been unable to find programs to suit their needs. It is not just educational improvement. It is social change."[5]

The kind of educational programs we are discussing are a part of that change. The National Commission on Technology, Automation, and Economic Progress, established through an Act of Congress in 1964, presented its report to the President and Members of Congress a short time ago. Among recommendations dealing with education was one which described the kind of institutions we are discussing here:

> "The key institutions would be area technical schools and community colleges....The two types of schools might in many instances be merged into community education centers offering both the theoretical foundation of trade, technical, and business occupations and the opportunity to "learn-by-doing" while pursuing a liberal education or semi-professional training."[6]

The tide is obviously running in the direction of our interests. A diversification of education beyond the high school is called for. The society in which we live is demanding services which can be provided only by a broader spectrum of occupations. The world of occupations is saying to the community colleges of the country - send us people not only qualified as technicians but as persons. A careful analysis of the field of our concern today leads to a grim but inevitable conclusion that the center of greatest resistance to fulfillment of community college potential in technical education is in the educational community itself.

With all of its advantages of proximity to the high schools of the community, the junior college as a whole has not done a good job in communicating with these institutions. Perhaps there has been a fear that the collegiate institution might be viewed as a "glorified high school" if the relationship were a close one. For whatever reason the high schools and community colleges which have established effective articulation are exceptional. And this is particularly true in regard to the student who will choose an occupational program.

Another high wall appears to exist between occupational programs and personnel of the community college and the programs and personnel of secondary vocational education. As vocational education has moved to post-secondary levels in many fields, a spirit and organization for communication between the secondary vocational educator and community college personnel generally has not been developed. This is often true at local levels, frequently at state levels, and even at the national level. Incidentally, another aspect of this problem of communication may exist between the "academic" and occupational personnel on the same college campus. Common interests are only beginning to be recognized.

We cannot leave the problem of communication without some reference to the university or four-year college. A great deal has been done in articulation between two-year and four-year institutions for the purpose of facilitating transfer. But little has been done to develop mutual understandings in regard to the occupational programs of community colleges. Very few universities prepare teachers or administrators for this educational function. A number of universities were contacted by a staff member of AAJC a few years ago to ascertain interest in stepping up efforts to prepare junior college teachers. There was enthusiasm for programs to prepare these teachers - if they were to move toward the doctorate and teach the transfer type courses. But, in general graduate deans were not at all sure that faculties could be persuaded to have an interest in preparing teachers for semi-professional and technician type programs. And the question is still put to junior college people by their colleagues in the four-year institutions and universities when controversial issues arise such as specialized accreditation and professorial ranking and academic senates - do you want to be considered higher education or not?

The notion appears to be, either you emulate the university in your policies and practices and programs or you are not of the fellowship of higher education and if not of this fellowship then we cannot understand each other. Perhaps these are harsh words, but, regretfully, communication has been so deficient that the description has a basis in fact.

I have said enough to reveal my conviction that the greatest communication problem technical education personnel confront is in their own educational fraternity. Here, in long existing concepts, definitions, terminologies, academic structure, prestige symbols, lie the most resisting forces to the full emergence of technical education in the junior college. Recent problems with federal enactments would not have occurred if higher education had spoken out with a clear, confident, and understanding voice about specialized accreditation as it applies to occupational programs. Business, industry, labor and the professions are in general taking initiative in this field - urging the community college to respond. Union Electric, located in St. Louis, advertised in the Wall Street Journal recently - "St. Louis Grows in the Strategic Center of America - New Junior College to Meet Industry's Manpower Needs. The growing manpower needs of industry and business will have a new and continuing source of technicians and skilled men and women."

If a big part of ineffective communication is in the educational realm, what action can we take? I suggest in approaching possible solutions that we think about communication as having its basis in shared experience. Words come to have similar meanings if they are based upon common experience. A popular song of some time ago said it pretty well - "Getting to know you."

Perhaps this sounds like an oversimplification or at least trite but solutions are often simple. Here are some proposals:

1 - AAJC and the American Vocational Association could hold a series of conferences to examine common interests and problems looking toward cooperative activities where appropriate.

2 - In each community college occupational education personnel could take initiative in arranging regular meetings with their secondary school counterparts for exchange of views, information, and advice toward improved communication.

3 - Establish a working relationship among talented people from the occupational fields, the universities, and community colleges to give sustained and organized attention to new curriculums in the occupational fields. A prototype of the scale of this effort can be found in the new approaches formulated to physics and mathematics during the past few years. My concern is with improved curriculums but also with the quality of interaction which could take place among the personnel involved. This would be one way to identify and utilize a cadre of outstanding leaders.

4 - Improve the use of advisory committees. The most significant kind of communication for the community college is at the local level. Some institutions have done this well. Many need assistance so that such groups are more than "window dressing." A strong advisory committee for each occupational

program ought to result not only in a realistic and up-to-date curriculum, but in effective interpretation of the college to the community and of the community to the college. Placement and follow-up, two essential tasks, are further facilitated through such committees.

Conclusion

The purpose of this paper has been to stimulate thought and discussion concerning some of the societal issues confronting improved implementation of programs of technical education. Since we all observe from different platforms, it is likely that some will disagree with the opinions expressed. Let us bear in mind, however, our common concern that appropriate educational opportunity beyond the high school be provided for all those who can benefit from it. In our society the individual's sense of worth and identity is inextricably interwoven with his vocation. At the same time, providing individuals with satisfying vocations has profound implications for our society. As we continue to examine and debate these issues, let us always seek to improve the quality of our work by remembering that our aim is not consensus but competence.

References

1. National Advisory Committee on the Junior College, A National Resource for Occupational Education, Washington, D.C.: American Association of Junior Colleges, 1964.

2. United States Department of Labor, Occupational Outlook Handbook, Bulletin No. 1450, Washington, D.C.: U. S. Government Printing Office, 1966-67, pp. 15-16.

3. Kinsinger, Robert E., Education for Health Technicians - An Overview, Washington, D.C.: American Association of Junior Colleges, 1965, p. 11.

4. Kinsinger, Robert E. and Muriel Ratner, Technicians for the Health Field: A Community College Health Careers Study Program, New York: University of the State of New York - State Education Department, 1964-66.

5. Bowles, Frank H., Address presented at National Conference on Higher Education sponsored by Association for Higher Education, Chicago, March 14, 1966.

6. National Commission on Technology, Automation, and Economic Progress, Report, Technology and the American Economy, Volume I, Washington, D.C.: Government Printing Office, 1966.

REACTIONS, RECOMMENDATIONS AND RESEARCH PROPOSALS

for

TECHNICAL EDUCATION AND SOCIETY

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The State Education Department
The University of the State of New York

It must be emphasized at the outset that a technical curriculum prepares the student for earlier employment, and that while employed as a technician, he may continue his educational development on a part-time basis, and this, with considerable financial support from his employer. In actuality, many students may be terminal, but the curriculum should not be.

Concerning the responsiveness of technical education to change, the key word is flexibility. There is a need for more flexible administrative leadership, more flexible technical teachers, more flexible counselors, more flexible curricula, and above all, more flexible graduates who can adjust to a changing technology and a changing work environment. To this end, advisory committees will be valuable and summer employment for technical teachers will be most useful. However, if the personnel involved -- advisory committee members, administrators, and faculty -- are either unwilling or unable to look into the future and develop technical curricula to meet the future needs of the graduate, then technical education will continue to lag behind the changes in business and industry.

Concerning the question of utilization of technicians, there is much to be done in the way of educating prospective employers. They must be helped to see that it is to their advantage to employ technicians within their own companies. The most important single activity that could be undertaken to improve the utilization of technicians would be to obtain the cooperation of a number of companies and financial support to undertake detailed analyses of the functions that people perform within the total operation. Much of what is currently done by personnel having bachelor's, master's, and even doctor's degrees could be done better by a well prepared technician, and with considerable resulting economy.

In contrast, the traditional skill survey misses the critical point. The reported, projected, or felt needs for technicians are usually based upon records of previous employment of such persons, or upon the personnel department's lists of openings, but it doesn't get to the heart of the question.

The problem of communications can be aided only if there is first a good story to tell. All of the public relations effort in the world will not improve the attitude of society toward a curriculum that is unalterably terminal in the sense that it cannot serve as a building block toward more advanced credentials if desired. The simple story should be that technical education prepares the student in two years for a good paying and interesting job, that this education can be continued later if desired. This uncomplicated message will assist in interpretation not only to prospective students, but to their parents, to their counselors, and to the general public. If one has a good story to tell, the word spreads very quickly even when you are trying to keep a secret.

Occupational curricula themselves cannot be addressed to too narrow an occupational specialty.

In our modern technology fast obsolescence is inherent, but protection of the student from premature obsolescence can be accomplished by broad occupational curriculums in opposition to narrow technical specialties. It is possible to provide the highly technical, highly specialized training for specific narrow technical fields, if necessary, during evenings and on Saturdays.

One of our most urgent problems is that of forecasting occupational trends and needs. Statistics of occupational forecast by occupation simply do not exist. There does not seem to be any serious effort to change this situation. The federal and state agencies generally admit an awareness of the problem and cite the usual reasons as justification for not being able to provide statistical services of this kind. The only thing available is the census figures. The occupational titles used are generally inappropriate for this purpose. There have been attempts at the state level to study this problem and to produce some statistics, but there is no way of improving the situation unless the Bureau of Labor Statistics does something more effective. In this day of rapid change, by the time the census is published, the figures are so badly out of date as to be of no application at that moment. If we are to do any sound planning to be in a position for supplying trained manpower, we must have some kind of judgments from somewhere as to what the volume of demand is going to be.

The discussion of status indicated that in some areas the concern is really not in improving prestige status for occupational programs, but rather the need to raise the aspirations and goals of potential students to think in terms of college education of any sort as preparation for an occupation. The prestige problem for an occupational curriculum is not so prevalent in connection with student populations which come mainly from culturally deprived families where occupational preparation is certainly understood and held in high regard.

A key question was raised as to the difference between colleges that are successful in interesting students in vocational education and those who continue to find it difficult to attract students to these programs. It was pointed out that merely offering programs -- to provide teachers and facilities -- is not enough. There is an important ingredient that must be added, and the discussion centered on what this ingredient might be.

In a discussion of this question the following points were made:

1) A good job placement program results in raising the prestige of occupational education. If graduates find the right jobs when they go out into the working world and if these graduates are brought back to the college to report to students at the college and others in the community, the prestige for occupational education is automatically raised.

2) It is important to assure that the college provides equal and indistinguishable facilities for all types of educational programs whether they be occupationally oriented or intended for transfer programs. This total integration and indistinguishability between the kinds of working conditions that students and faculty are faced with in pursuing an educational program is extremely important to assure that equal prestige is given to occupational programs.

3) In much the same vein, it is important that there be no distinction made between faculty members regardless of the type of educational program they are serving. Academic rank and faculty status should

be indistinguishable between faculty members offering educational programs, either in occupational or transfer activities.

4) There is an almost direct relationship between the prestige and success of an occupational program and the competence of graduates of the program. It was pointed out that a prime factor in providing for occupational education prestige is competent graduates, who are of paramount value in assuring that the program is accepted by parents, potential students and employers.

5) It was recommended that local industry councils be used both to help the college develop their occupational programs, much as an advisory committee, and as a public information group to help create the image of vocational programs which are highly desirable and appropriate activities of the community college.

6) It was recommended that it be the responsibility of the administration to assure that the entire faculty have contact with all types of students, that there not be a sharp distinction made between technical and transfer students which might require certain faculty members to be responsible for teaching only certain types of students.

7) Two problems that should be avoided in improving occupational program recognition were identified:

    a) The complete rejection for transfer credit of any educational activity undertaken within the framework of an occupational program tends to raise doubts in student's minds about the quality of their educational program. Efforts should be made to assure that those portions of the educational program that are not in a very narrow sense strictly applied technology be recognized by senior institutions awarding a bachelor's degree to protect students in the event that they change their occupational goal and decide to go on.

b) In some institutions, honor societies have arbitrarily limited their membership to transfer students. This practice automatically downgrades occupational programs and should be avoided.

The image which is projected by the college has an impact on the attitude of people towards occupational education. Images are often made by the college through their public relations program and the way in which they present themselves to the public. Attitudes toward occupational education can be changed by the type of presentations made to the public regarding the college in general. If the relationships are properly developed with industries employing graduates of the program, they can, by joint effort with the college, help to alter the image of occupational education to the advantage of both the college and the employing industries.

It was emphasized that open-ended programs should not refer only to programs designed to permit transfer into upper division baccalaureate programs. Any program that would permit the completing student to enter an occupation and later pursue work designed to improve skills, social ability, or occupational ability, should be considered an open-ended program. Most open-ended programs are described as containing general education components and theoretical components such as basic science and mathematics courses. It was suggested that programs containing only specialized entry level training permitting later completion of general education and theoretical components following employment should be available for some students.

Respectability and prestige of the technical programs at the junior college level would be helped if federal legislation relative to higher education would use the word junior college in referring to this type of institution rather than to say that this particular legislation applies to institutions at less than the four-year college level or that it refers to institutions of the post secondary nature whose programs are less than college grade. By wording legislation in this manner it would improve the status of junior colleges and make benefits more readily available through the various sections of legislation which have financial eligibility as a factor.

Junior college programs including technical education, should be specifically provided for in the official organization of the Higher Education Division of the USOE. The thought was that if junior college technical programs were not considered an official part of higher education, then perhaps they might be lost or pigeon-holed in the Bureau of Adult and Vocational Education. It was suggested that the AAJC take all steps possible to encourage regional accrediting associations and the National Commission on Accreditation to evaluate colleges in their inspection visits as institutions rather than to think of them specifically in terms of the segmented programs that they offer.

It was felt that a judicious use of cooperative work-study plans could interest employers in using technical graduates, that they would become more interested in understanding the nature of technical programs and that they would be more willing to serve effectively and cooperatively on advisory committees. All junior colleges with technical programs should be encouraged to promote exchanges between industry and business and faculty members. Also administrative personnel should move back and forth. In other words, anything and everything that would increase the understanding and appreciation on the part of industry of what the two-year colleges are trying to do would be all to the good.

A need was identified for state-wide or regional programs in some of the more esoteric occupational or technical fields which could not be justified on the basis of a single institution or a single community. In addition, regional, state and national planning is necessary to keep instructors and administrators up to date. It was pointed out that the university is often less in touch with current trends in industry and business than the community college. Especially recommended were seminars or instructional improvement sessions for specialized instructors which need to be promoted on a regional or area basis and with a highly specialized approach.

It was suggested that some of the four-year colleges be encouraged to develop "upside down" curriculums, which make it possible for the occupational students to transfer with less loss of credit.

Several questions were posed:

How can we identify, locate, and motivate attendance at in-service training programs for occupational teachers? How can we finance this at the level that the National Science Foundation has been able to finance similar programs for instructors in mathematics, biology, etc.?

How can we develop more uniform standards for technical and vocational programs? There are often wide differences in programs with the same titles and no national accreditation in most occupational fields.

Recommendations

1. The AAJC or organizations like MTEC should encourage coordination between the several professional groups which are concerned with various levels of occupational and vocational education in terms of promoting such programs. The reference was to such organizations as ASEE, ATEA, AVA and others. It was also felt that there should be some provision whereby the two-year college people are able, at the local level, to meet with key people in the technical program to provide a clearing house and to assure a true understanding of the inter-relationships. There was some thought that this should also include people on the secondary level, because there seems to be some difference of opinion as to whether all of the programs at the post secondary level which are provided for in the Vocational Education Act are functions of the secondary schools.

2. Junior colleges who do not have directors of public relations should hire such persons -- the smaller junior colleges on a part-time basis. The junior college director of public relations would have this as a part-time assignment in addition to teaching duties. Then, colleges should make sure the director of public relations knows about the technical education programs, successful graduates of these programs, and gets the message into the media.

3. Bright young leaders of technical education programs -- directors or assistant directors -- should be urged to apply for fellowships in the junior college

leadership programs around the country. If more junior college presidents came into their jobs with background in technical education, this, in itself, would serve to improve the image of this field.

4. There should be a national development of an instrument which could be used to collect data on job needs. In this way there would be uniformity of terms. Perhaps the first stage would be to collect instruments which have been used in states such as New York, Texas and Florida. This should be a simple enough form so that it will be used by industry, and it should be designed to be reused on an annual basis because the information about job trends gets old very quickly.

5. Technical educators should be willing to work together and support the overall cause of technical education rather than sit smugly in their own little shell and push only the specialties which are part and parcel of their own institutions. In other words technical educators should not be parochial in their outlook but should take a broad scale approach. Through their own activities they should encourage the general acceptance on the part of all education of technical education as a worthwhile and desirable part of the entire education program.

6. The U. S. Office of Education should be encouraged to recognize community colleges, associate degrees, technical programs and enrollments, in legistration, regulations, and statistics.

7. A national effort should be made to gather and publish case histories of successful technicians. This may be included in several publications. The major emphasis would be upon people who originally took a so-called terminal

program to prepare for occupational competency, are successfully engaged in a technical occupation, and are now either successfully continuing to perform this function or have moved back into educational channels as far as the Ph.D. and have in the process received full credit for work they had done in the two-year occupational program.

Research Proposals

The most promising area of research would appear to be that involving social attitudes toward technical programs and occupations, prestige, status, etc. Much related research has been done in this area by sociologists, media research and advertising persons and those involved in marketing. Subsequent to the identification of useful techniques, campaigns, preferrably at the national level, and perhaps originating with AAJC, might be undertaken to "change" the public image of occupations, programs, etc., especially those in community colleges. Studies of some variety, probably not research studies, should be directed toward defining the role of small colleges and technical education. Perhaps this could be better stated in terms of "How can an individual small college define its responsibilities in this area and expedite them?"

A follow-up of technical students both in their upper division work and to assess the difficulties they face when they move out on the job was suggested to determine if there is a difference in the way in which they function in an occupation as opposed to those who went through a standard bachelor's program.

It was suggested that a study project be developed to determine what occurs when technical students are given advanced standing and whether they can be given advanced standing on the basis of specific testing rather than consideration of the kinds of educational programs to which they have been exposed. Reference was made to the kind of program which is being pioneered by the College Entrance Examination Board wherein a student can have a lower division course waived if he successfully passes an examination designed to test him on the subject matter of the course from which he is requesting a waiver.

Research was suggested to enable a baccalaureate granting institution to develop specific curriculums for students that would transfer out of a technician program in contradistinction to the standardized baccalaureate program based on a four-year integrated progression.

A research project was suggested to look into the motivational background of students and parents, i.e., what creates prestige for various types of occupations? A project was suggested to study placement practices and to evaluate the methodology used by various institutions and their effectiveness. A graduate follow up was suggested to determine in detail the usefulness of the placement procedure.

The AAJC should obtain a grant to conduct equipment development studies to be matched to appropriate technical curriculum. The curricula are being developed fairly well in a variety of ways, some at the national and some at the state level, but there is a need to disseminate information about appropriate equipment to be used in a number of technical curriculums.

There was considerable discussion on the inadequacies of information available from government sources such as the Bureau of Labor statistics and other groups relative to the job needs and the availability of jobs for technicians. The question was raised regarding now to decide in the years ahead what kind of technicians will be needed, how fast you can get the information, how reliable it will be. As much research as possible should be encouraged in order to determine a workable and practical basis for matching men, training and jobs. This is not one study but a combination, and this might be a good way for the Department of Labor to use new appropriations that are anticipated in massive amounts.

TECHNICAL EDUCATION AND ADMINISTRATION

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In the light opera, "Fiddler on the Roof," the story-theme unfolds about a Jewish Russian family turning away from the worn roots of the past. The father is the leading character and a traditionalist. The family lived in the town of Anatevka, where tradition was everything. "Without our traditions," says Terya, the father, "our lives would be as shaky as a fiddler on the roof."

It may be that the roots of tradition are not as deep now as they were in Terya's Russian village of Anatevka in 1905. However, as we know, cultural traditions both rise and die slowly; as surely as the processes of education contribute to perpetuation of society, education also contributes to social-cultural lag.

Historically, in the junior college movement, there are innumerable debates between the philosophical defenders of the "tradition" of the liberal arts and others who would turn away from these roots and introduce instruction in technologies (occupational education).[1] There is undiminished reluctance on the part of some liberal arts "traditionalists" to concede that there are worthwhile "values" in occupational education to students beyond the monetary ones. A few vocational educators compound the issue by minimizing the contemporary importance of traditional education. They irrationally suggest that vocational-economic skills are sufficient to the students' needs. Neither of these extreme philosophic educational positions are popular.

The apparent trend in junior colleges is to the comprehensive curriculum and including vocational-technical curricula leading to occupational employment. As junior colleges increasingly break with traditions, they need not become "as shaky as a fiddler on the roof." One national leader, John Lombardi, who has experienced at firsthand the evolution of the junior college movement states his convictions in the form of a creed:

> "I believe that the future of the junior college depends on the maintenance of the comprehensive concept which includes a wide variety of occupational or vocational, or trade courses and curriculum or combinations and the lower division courses and curriculums. This to me, is the essence of the junior college. If the junior college is to be some other kind of institution, then we should substitute some other word for 'college'."[2]

Those administrators who may be doubtful of whether the two-year college should be unhampered by conventional notions of what constitutes higher education should be encouraged by one of the conclusions to Medsker's Study of Junior College Faculty: "the fact that two-thirds of the staff believe the two-year college should disregard tradition in higher education would appear to make it easier for junior colleges to develop programs less orthodox than those of four-year colleges, and this would have a bearing on programs for general education and vocational education."[3]

Seemingly, the majority of junior college faculty are not as "shaky as the fiddler on the roof" as they depart from traditions.

Administrative Organization

It is obvious that the administrative structure of the college must be designed to promote balance and to effectively achieve the varied educational purposes of the institution. Determination by the president and deans of the administrative structure affects the functioning of the entire institution. Most significantly organizational structure determines the scope and services of technical education available to the students.

Full consideration of the ultimate effect of the structure upon educational opportunity to the occupationally-oriented students is neglected. Most junior college structures result in domination of the organization by the university transfer function.[4] If technical-vocational education, student affairs, and community services are as vital as the transfer program (college-parallel), they must have equal organizational status if they are to prosper.

College presidents do not have the time or experience with industry, business or agriculture to enable them to direct the diverse details involved in managing the operation of technical education programs. Consequently, this responsibility is normally delegated to a qualified technically-oriented administrator who undertakes the specialized task of building a program tailor-made to the community. This administrative person may be called a vice-president, director or dean for technical education. He will formulate courses and procedures to meet the needs of the area for which the occupational training is given. Such a specialized administrator will determine what program should be promoted, whom to contact for cooperation and how to coordinate these complex programs.

Many more colleges could justify the appointment of an administrative vice-president, director or dean with the defined authority encompassing the occupational training areas of the college. Colleges that serve county regions or large urban areas with diversified occupational training needs and thousands of prospective students, have particular need for this type of specific administrative leadership; in smaller community colleges, an assistant dean or division coordinator may handle these necessary responsibilities for the dean of instruction.

The chief administrator responsible for policy and operation of the technical educational program regardless of title should occupy a position at the top echelon of administration; it is essential that his authority be commensurate with assigned responsibilities. Although his title is helpful to his success, his place in the structure of the organization is even more important. Any occupational program directed by an administrator at the third or fourth staff level in the organizational structure has been pre-determined by the president to be a secondary or tertiary function of the college. In this event, both the program administrator and the technical faculty will soon "learn their place" in the hierarchy of the organization; they will receive only indirect representation in administrative councils, inadequate budgets and limited administrative concern or support.

Organizational purposes associated with the college must necessarily be examined periodically and decisions must be made regarding them, particularly with respect to the technical programs. Also, translation of specific purposes from philosophy into action demands planning of precise procedures, division of responsibilities and task assignments; these are always subject to scrutiny in the light of changing conditions and changing personnel.

The external socio-technological changes and information amount to types of pressures that modify either the technical education division purposes or the procedures for accomplishing them. Consequently, the chief administrator must be sensitive to the need to periodically interpret the technical division goals, and the roles of the coordinators and teachers to all other personnel so that hopefully all these individuals may harmoniously accomplish their own aspirations as they, at the same time, accomplish the designated institutional goals.

To activate the organizational purposes through effective communications and participation requires management skills on the part of the chief administrator. Both the president and the director for technical education must distill "purposes" into specific departmental objectives and make determinations required by two major types of problems: deciding what is to be done (purposes) and how it is to be done.

Traditionally, goal determination and role allocation are two major functions of the chief administrator, although some faculty challenge this. These crucial administrative decisions are not once-made then forgotten. They must be re-examined often. The chief administrator and directors or deans of technical education must perform these functions as often as changes in external forces, changes in technology or personnel demand it. Normally, the chief administrator, upon recommendations of associates and faculty, makes the initial decision whether purposes or organizational roles will be examined, when it will take place, and who will be involved in the evaluation.[5]

If the administration for technical education believes in the concept that every organization and every department in it must recreate itself, then there will be evaluations and developmental changes requiring much energy and time from top management, supervisory individuals and faculty. Probably in fact, too few administrators practice this concept.

Role of the Junior College President

The chief administrator is not only director of the organization's energies, but he serves as the mediator of personnel and as the public relations bridge between the college organization and the community or area being served. He holds high hopes that through wisdom he will maintain balance between the institution's integrity and effective interaction with the changing social economic environment of the community; unlike the universities, he cannot afford to let the local junior college become an island, for it cannot long survive in community isolation.

One authority states that educational leadership is the president's prime function: "We believe that the president must preserve his educational leadership, that it must indeed be enhanced further....We believe that implicit in the office he holds is the duty to participate actively in framing and carrying out the teaching and policies of his institution."[6]

Some feel that the college president is no longer the prestige figure he once was, just a "manager, skilled in administration, a broker in personnel and public relations."[7] However, Phillip Selznick believes the president has an essential role of leadership if the organization is to function effectively with the required four concepts: (1) a clear definition of institutional objectives (2) a clear embodiment of institutional purpose (3) effectual defense of institutional integrity and (4) effective ordering of internal conflict. In this organizational environment, the junior college president's role is more than a manager--he is a mediator, agent for change, power figure and decision maker.[8]

Most certainly, the comprehensive community college has emerged with a need for presidents who have imaginative and versatile leadership. The president plays many roles, the "role of educational leader, as community leader, and as executive of a complex enterprise with many facets of management relating to personnel program, plant, finance and public relations."[9]

The junior college president's leadership, like that of a four-year college president, is "infinitely more difficult than the task in more authoritarian, more monolithic business firm, governmental agency or military unit." He must achieve consensus among individuals within and without the institutions, with widely varying values. And in doing all of this he has "less power to direct, ...less clearly stated goals, and less opportunity to relate tangible results to proposals than his contemporaries in business governmental enterprise."

One of the chief skills of the junior college president should be his ability to use the consultative process. His success with technical and trade personnel may well be related to his belief in the principle of consultation and his skill in its practice.[10] Through experience he learns that issues tend to be resolved better by consensus than by dictum. The president will "patiently continue to talk and consult on major issues while consensus is building up."[11] A wider sense of ownership in the decisions and a more direct responsibility for carrying them out on the part of technical education faculty are both worthwhile results.

In the future the junior college president's role may become more like that of the president in the university -- "to coordinate for the accomplishment of common purpose the efforts of many persons, each more learned in some direction than himself; to be sympathetic toward both people and ideas; to try to preserve a just balance among the institution's several commitments;...." and "to persuade rather than to command; to lead....but never to boss."

Role of Vice President, Directors or Deans

Vice presidents, directors or deans of technical education who carry the functions at the top policy making level are faced with the reality of functioning in a sometimes hostile faculty environment. Their titles and functions represent areas of incompatibility between the maintenance of law and order that restrict the play of faculty individualism and permissiveness that is enjoyed by some creative, free-wheeling teachers. Technical subject faculty members instinctively fear administrative dominance and diminution of their own participation in decision making, particularly when they believe there is a relationship to administrative plans for "economy" or efficiency."

The demands made upon the vice president, director or dean responsible for the college technical programs comprise both leadership and executive types of ability. A list of such duties might include:

(1) selection and recommendation of professional staff, including teachers; the organization of professional pre-service and in-service training

(2) direction and supervision of the total technical program including curricula for full-time or part-time students; also for adults undergoing training or retraining

(3) continuous production, evaluation, and revision of courses to meet rapid changes in the college program or for curricula under consideration

(4) initiating community occupational surveys and studies to keep the program reflecting the employment changes and job standards

(5) working cooperatively with advisory groups in the interest of coordinating the college programs with the local community or regional area

(6) cultivating the financial assistance, community support and public acceptance for the relatively larger costs of operating occupational programs

(7) conducting and encouraging close relationships between many types of interested community groups and leaders who should be informed and cooperating

(8) actively engaged in articulating the college occupational program with other divisions and beyond the college with feeder high schools and supporting school districts.

Other specific duties are required of the top administrator assigned to technical education, but these duties are more executive in character:

(1) determine and plan for purchase, installation, and maintenance of equipment and storage, control and distribution of consumable supplies

(2) preparation of budgets and equitable distribution of funds to the various programs and services

(3) development and revision of instructional materials for diverse programs

(4) set up regulations and procedures for the orderly placement of occupational graduates and their follow-up in employment.

The administration of technical education at the two-year college level entails problems of special complexity and difficulty. These administrators of technical education must frequently have a higher degree of management ability than that needed for directing the relatively stable, pre-structured college transfer program. This fact must be taken into consideration as the administrative structure of the comprehensive institution evolves.

Coordinators and Teaching Faculty

Effective administration for technical education involves not only the top supportive relationship of top level administrative dean but the appointment of subordinate assistants, directors or coordinators in a large institution. Ordinarily, the technical staff is headed by a chairman for each related group or department of applied arts teachers, who is given about 20% release time to assist his teaching staff. If this department individual is expected to follow up students after graduation into employment and spend much time working in the occupational field as a liaison between the college and the community, he may be designated as a coordinator of technology with a salary increment for his additional responsibility. It is usual practice to assign, at extra pay, either the departmental chairman or a coordinator to supervise each area of the applied arts in the evening college program. This helps insure commensurate practices and standards, both day and evening, in the same instructional department.

Faculty selected for staffing the technical programs are described as highly specialized, oriented towards their subject fields and qualified by occupational experience. The curricular level or field of teaching may require varied amounts of education and preparation via work experience. Strict uniformity of standards is not feasible. Most junior colleges technical education staff members will generally equate in ability and experience with specialized technical engineering, or middle-management supervisory personnel in business or industry.

In many urban two-year colleges located in diversified industrial areas the teaching staff has usually been screened from numerous candidates; these individuals often represent a very talented group and are highly respected for their competence in their respective fields. Many of them practice as consultants to the business or industries of the area, an activity which brings added prestige to the college and its technical curriculums. They are often inspired teachers.

Traditionally, many State Legislatures or State Boards of Education enact regulations affecting teachers and teaching certification. They intend such regulations to control "breadth and depth of subject matter" which they desire to be required of every teacher, as these affect excellence in education. If there is soundness in this argument for teachers of general studies, it pertains even more functionally to occupational, technical instructors whose graduates are fed directly into the economic stream of the community and nation. In the absence of state regulations the college administration should set up their own screening procedures and minimal standards for selecting competent personnel to teach vocational subjects whether business, agriculture, trade-industrial, or technical education. College personnel standards are tailored to fit the appropriate occupational requirements, including also minimum formal education, teacher training and acceptable work experience.

In the instance of technical education instructors, the part-time evening teacher needs five or more years of full-time training and experience in the subject taught if quality instruction is demanded. The full-time teacher (day) would have as an ideal, 7 years or more of successful occupational preparation and experience. The general success of technical educational programs at the community college level is always directly related to maintaining high personnel standards and the growing recognition for occupational proficiency of occupational instructors.

A major function of administration is the proper selection, orientation teaching training, supervision and constant evaluation of teaching staff in the evening technical education program; many of whom are transitory. Involved in all this is the obligation to operate the evening program consistent in standards with those offered in the day instructional program, otherwise the college tends to deteriorate into two levels with unrelated, separate educational functions.

The technical education departmental chairmen or coordinators, through their supervision work, come to know the ability, experience and quality of instruction offered by part-time teachers in the evening college. Therefore, the part-time instructional staff becomes a foremost source of recruitment for adding or replacing day technology instructors.

One of the most successful procedures for recruiting teaching staff is to employ the interest, good will and professional concern of the regular teaching faculty. They normally desire to fill the position with a competent individual who will reflect the reputation of the department and one whom they can respect. In most instances the faculty can locate personnel in transit, provide leads to consider or make recommendations of specific former graduates that culminate in securing qualified teaching personnel acceptable to the college. Adminstration should always realize that technical teachers have much dedication to their applied subject or field, perhaps more than loyalty to the institution; they work diligently to locate prospective teaching staff whom they consider to be professional equals as their associates.

It is noteworthy that recruitment of technical subjects teachers has been successful when salaries have been raised to complete more favorably with private industry and their higher wages that prevail. At least one college now recruits engineers and technicians with as much as 14 years experience. In late years also because of the better public image of college occupational education, ample candidates required for vocational-technical teaching have been recruited at least by colleges in metropolitan centers. Primary factors have been (1) the acceptance of the principle of equating each year of occupational experience minus 4 years learning period, with teaching experience and (2) equating 7 years of verified vocational experience with a B.A. degree for salary rating-in purposes; these two factors enable new "hires" to enter teaching with favorable salaries.

Capital Outlay Facts and Figures

Augmented budgets for capital outlay -- buildings and equipment -- are vital in this period of junior college expansion. Occupational-technical programs include multi-levels of occupational skills that typify employment in business, service occupations, or industry; this teaching requires specialized shops or laboratories that provide for both theoretical projects and realistic occupational experiences consistent with the objectives of the course. Unique, specialized facilities are designed for each occupational category and must include a well-balanced variety of modern equipment utilized in the world of work.

Capital outlays required for occupational education vary considerably but are always higher than for "pencil and paper" courses in the curriculum. In California junior colleges, on the average, the total construction and equipment costs are about $3,200 per student station for non-vocational programs. In sharp contrast, it is not uncommon for costs of a vocational program to be about $6,000 per student station when building and equipment are consistent with technical standards of business and industry. In extreme instances, the cost of equipment alone may approximate $6,000 per student station in such technician programs as metallurgy, electronics, plastics, or engineering aide programs. More frequently, instructional equipment purchases for an occupational training program cost between $500 to $2,500 per student station -- from 15% to 75% above the costs of non-vocational programs.

In order that a technical training facility may continue to be updated it is vital that there be a systematic, budgeted equipment replacement schedule. There sould be a planned annual schedule for replacing outmoded and worn out equipment. It is both educationally impractical and dollar-wise wasteful to retire a total laboratory or shop in any single year. Department chairmen or coordinators should recommend an annual item replacement schedule to the administrator of educational services. This schedule should be annually reviewed by the administration, based on such criteria as (1) estimated years of use, (2) cost of maintenance and repair vs. replacement costs, (3) limitations of educational value of older equipment, and (4) the advice and recommendations of advisory committee members who are experts.

It is conceded that training equipment receives undue and severe wear by student learners, as they are not proficient operators of equipment. Most training equipment is used several times daily and generally has a higher rate of breakdown and wear than if the same equipment were used in business or industry. Equipment replacement schedules used in industry are not useful or accurate guides for college planning. Beyond budgetary considerations, it is imperative that occupation-centered laboratories should never be allowed to become obsolete or include shoddy equipment, as this invites community criticism and rejection of the program by business and industry employers, parents, and by educators themselves.

It is believed that in consideration of capital outlays needed for the further development of technical education both local and federal funds must be employed because of anticipated programs and expansions into new technologies. It would be educationally unsound and unacceptable to community leaders to plan new campuses without modern laboratories and shops or to inadvertently allow existing occupational facilities to become obsolete.

It may be worth investigation to determine the advisability of renting or leasing equipment in certain situations, rather than outright purchase of all instructional equipment. It might be good budgetary practice to rent or lease training equipment when it will have a short-term usefulness, perhaps of five years or less. It is certain that presently "owned" college equipment, when replaced and sold at auction, recovers only a small portion of the original investment.

Also, ways and means of encouraging industry to provide equipment loaners and gifts should be further studied by all colleges with extensive laboratories or shops. The ramifications of necessary paper work involved in the contractual arrangements for making loans or gifts should not be a tedious and burdensome experience to the doners. They should be enabled to get their tax "write-off" with the greatest of ease.

Advisory Committees

College technical advisory committees cooperate with and help colleges to avoid the lag in occupational information and also bring into face to face relation the users of the college product with the administrators and instructional staff.

One important facet of coordination for technical programs is the utilization of advisory committees. These committees are designated for each specialized occupational curriculum. The committees are appointed by the president of the college from lists of names submitted by organized professional groups and those submitted by the responsible departmental coordinator. Representatives from local or state governmental agencies are included on the committee.

In the Los Angeles Junior College District, all of the colleges seek advice and counsel from management, labor and governmental agencies both in the establishment and operation of specialized occupational programs. For instance, at the Los Angeles Trade-Technical College there are over 400 lay people who participate annually in some fifty regular committees or curriculum development committees. These Trade-Tech committees have contributed or loaned equipment, presently in use, amounting to over $900,000 in value; several committees, such as printing, sheet metal, and apparel, have existed for about forty years.

The advisory committees for specialized training programs, meet at stated times. They may assist in developing new programs reviewing existing curricula, providing equipment or supplies, and evaluating the program and graduates. Before any program is started in a new occupational area an advisory committee is established to aid in gathering data, verifying the need, and exploring community support.

As a matter of long-term experience, advisory committees for specialized programs also play a vital role in college-community relations, bond elections, scholarships, and helping the college to create a good community image.

Advisory committees, when established for each curriculum area, provide authoritative evaluation and guidance in establishing and operating occupational and technical training programs. Community college advisory committees are of inestimable value. They contribute effectively to maintaining acceptable standards, to employment of the graduates and to interpreting the colleges to the various publics. Extensive utilization of advisory committees should be encouraged and their relationships expanded at all colleges if more leadership in our communities is to become involved with our colleges.

College Research

With the extensive present and future need for trained personnel to support our way of life, -- the critical questions are "who shall we train" and "for what occupations?" In terms of this local and national concern, two-year college administrators must provide an institutional research program, seek out employment statistics and enlarge student personnel services. We do too little "engineering" of programs and experimentation in leading young people into occupations in which they have interest, realistic chance for success, and into fields necessary for development of our local community, state and nation.

Some of the "drive" for administrative interest in community employment research has come about by the national and local evidences, observable everywhere, that automation affects more and more job skills and shifts the whole occupational distribution. The coordination of college occupation-centered programs within a community or region is becoming exceedingly difficult. There is need for a continuous flow of reliable data, applied research on local and national occupational needs and shifts. Administration must encourage constant study of the educational implications for guidance and curriculum development by counselors and faculty. Research should be an essential element and service provided for junior college planning. Four goals for employment research conducted at the college for its own "feedback" would be (1) to analyze present and future occupational needs in the local area where a large proportion of college graduates seek employment; (2) to describe the essential competencies and standards required to meet these occupational needs; (3) to evaluate the extent to which the college meets these competencies and standards; and (4) to identify newer occupations and changes in occupations that suggest curriculum development of updating.

Follow up of both drop-outs and graduates placed in employment as a result of the college program should be a commonplace procedure on the part of the school authorities. This activity provides "feedback" necessary for evaluating the program, and gives many insights into teaching methods, the content of the curriculum, teacher-student relations and as a check on counseling

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practices of the college. An annual follow-up of all graduates or a reasonable sampling of graduates, drop-outs, is useful to insure the effectiveness of the program.

There is definite need for college administrators to spend more budget on institutional research, follow-up studies, occupational surveys, counseling procedures, develop experimental techniques, and augment occupational counseling staffs. We are wasting far too much human vocational talent enrolled at our junior colleges.

Interpretation of the College and Its Role in Technical Education

In the preceding sections of this paper, the internal structuring and functioning of the institution has been examined. Attention has been devoted to role allocation. We now come to a far more significant concern than any of those discussed to this point. Unless the college and its program is effectively articulated to its publics, all other efforts notwithstanding, the program cannot achieve success.

There is not universal acceptance for technical education as part of the junior college curriculum, particularly among the so-called "intelligentia." Mr. W. H. Ferry, Center for the Study of Democratic Institutions, sponsored by the Ford Foundation (Santa Barbara, California), recently stated that two-year colleges should persuade the legislature to relieve them of the burden of vocational training. "Meeting this statutory obligation is delaying the proper development of the most exciting of experiments, if it is still to be called an experiment, in higher education. It is a distracting, time-consuming, costly and irrelevant obligation."......"I see no reason why the two-year schools should be burdened with an assignment that in the nature of the case it must do inadequately...." In his final remarks he stated "....you have far more important concerns than readying young men and women for the job market."[12] Mr. Ferry's statements should sharply remind us that there are some leaders who do not welcome highly technical programs into the curriculum any more or less than trade programs; and as any junior college that introduced trade courses into the program found out, it had to "combat prejudice from within on the part of some of their own members and resistance from without on the part of the university, as well as tradition."[13]

What We Shall Interpret: The Basic Facts -- Unknown to Most Publics!

As we make plans for college interpretation to our publics, we shall discover endless opportunities to explain the purposes of the college and specifically the story of technical education. The basic facts pertaining to junior colleges - history, services, programs - are unknown to most publics. What shall we interpret?

FIRST - We explain that the role of technical education, as a major curricular element of junior college, is comparatively recent. We can briefly narrate to the publics that historically terminal and semi-professional programs have been emerging since 1920, and at least two early day leaders with great social vision urged acceptance of these programs. Lang insisted that the first concern of the junior college, "is with those who will go no further,"[14] and President Snyder of Los Angeles Junior College established fourteen terminal, semi-professional curricula at his institution in 1929.[15] Just this much history is news to most groups. We could also cite a few high lights of the vital role and interesting history of the privately operated Technical Institutes in America.

SECOND - We inform local groups that the newly established junior colleges are opening their doors as multi-purpose educational institutions; their curriculums typically include occupational programs ranging through business, trade-technical or technical-institute type offerings with significant differences in scope and objectives reflected in the instructional content. This is the national direction of the junior college movement.

THIRD - We make plain that with the diffusion of junior colleges there is now a dramatic increase in occupational education at the collegiate level for persons seeking to prepare for careers in business, industrial and technical occupations. This reflects an increased national recognition and acknowledgement of the importance and academic respectability of technology as a vital element in higher education.

FOURTH - We assure groups and individual community leaders that the concept of "collegiate" as it applies to all types of junior college education, is clearly undergoing change when it is described in terms of developing the potentialities of each student, and defined as "the object of all college functions is the student, and the purpose of both curriculum and instruction is to induce change...more mature behavior, and intellectual development and personal competence."[16] This concept of "collegiate" is not universally interpreted nor adequately communicated by junior college leaders to the high school principals and counselors, parents, civic leaders, union-management representatives, personages in business and industry.

FIFTH - We help the publics understand the effects of technology on society and education.

Technological change creates a direct need for more education and skill on the part of all workers -- whether in manufacturing, trades, service, business or government. Technical education is imperative to educating our citizenry to become responsible, productive, and capable of adjusting to evolving technology.

For more than 70% of the youths in the junior colleges because of changes in society, vocational education is their chief means of preparation for employment. By nature of their ability and interests, they need both a sound basic education and a technical education to enter the world of work.

SIXTH - We advise parents that their children must look to college technical education -- not industry - for basic training for employment.

The in-plant training in some large corporations is a factor in providing specialized training. But the 1961 San Fernando Valley Employment Survey clearly indicates the junior colleges will continue as major avenues for technical training. This survey shows that of a total of 837 firms and including 114,000 employees surveyed: 95% of all plants had 500 employees or less; 75% of all workers were employed in plants with 5,000 or less employees; only 17 companies had "staffed" training departments.

SEVENTH - We "point up" the reassuring statistics and general fact that there is a genuine need for the skilled and technical workers in the future.

This has been well stated by President Dubridge, "....More skilled artisans, technicians and mechanics, more skilled operators of complex machines and equipment will be needed. Most of all, workers will be required with versatile skills who can swing from one type of skilled task to another as the nature of manufacturing processes changes, or as new types of industries arise and as old ones decline."[17]

All of these facts regarding the necessity for technical education at the junior college level are factual and imposing. There are many more that could be identified. The various lay groups of our communities are deserving of better communication of these facts and interpretations.

Admittedly, local interpretation would be insufficient to the task, if there were no national, state or regional "back-up." However, we are assured of continued effective interpretation of the role of technical education in the junior college curriculum at the national level that comes from the activities of the American Association of Junior Colleges and its leadership, provided by Edmund J. Gleazer who calls for "a new kind of college -- standing between the high school and the university -- offering broad programs of experience in value in and of themselves, neither post-high school as such or pre-college as such."

Who is Responsible for Interpretation?

The primary objective for staff members at all levels in the institution must be interpretation of the technical program. Of all those groups to whom it must be interpreted, none is more important than the board of trustees. The board is an immediate and key group of lay officials who must be thoroughly educated to the role of technical education. The board not only controls the purse strings essential to the further development of occupational education, but its members are invariably active in economic, civic and political relationships; their understanding and belief in the programs, once attained, provide one of the most effective communication avenues to community-wide groups and leaders.

The president, the director or dean for technical education, should be authorized to present at regular board meetings technical education progress reports: curriculum, building improvements, faculty or student achievements, campus developments. Such positive information reports will help the trustees learn to appreciate the worth, importance, dynamics and the community acceptance of the role of technical education.

The college administration should not attempt to solicit general community interest in the programs of occupational education without first exploiting this close-by opportunity for interpreting the program to the trustees.

Too few faculty members participate in interpreting the college to the citizenry. There is needed far more interest, activity and concern on the part of the faculty to cooperate with administrators and help inform community publics of the vital role of technical education and varied services of the institution.

The deans or directors for technical education have many opportunities to interpret the program, for they cannot succeed as "four-wall administrators." They must participate widely in community affairs that touch on the socio-economic developments in the community that affect technical education; they must inform and explain the technical program as they rub shoulders with leaders active in shaping and determining community developments.

The departmental chairmen or coordinators for technical curricula can contribute to community understanding through personal qualities. They must radiate strong belief in the values of occupational education and inspire others to support these programs; they must be recognized as persons of integrity by the essential cooperating elements of the community, such as, labor unions, trade or management associations, technical societies, employers, equipment dealers and manufacturers, and local governmental bureaus. They above all, become person to person interpreters for technical education. They must face the truth that occupational education "although now an important part of public education, still needs those with a pioneering spirit who are willing to render service beyond the ordinary call of duty."

Administrative responsibility for "interpreting" the institution and its role in technical education is only one side of the coin of communications. Beyond this the administration is responsible for organizing a well-rounded program of public relations involving united efforts of administration, faculty and students. No one segment of the institution can accomplish this task -- not excepting the president who personally devotes appreciable amounts of his time to this program. Ideally, everyone gets into the public relations act.

It is certain that the administration must gain college-wide cooperation as it fosters techniques, plans public relations methods and publicity devices to enable the college program to be conducted in as professional a manner as possible. When the college program of public relations becomes sizable, it then becomes necessary to provide some budget and manpower with professional competence. The budgets of the college or the associated student body must ultimately provide staff public relations specialists or journalists to be employed and give direction and the needed "professionalism" to the program.

Improving the Image through Public Relations

What must junior college administrators do to identify and improve the image of the occupational program? First of all, administrators must be convinced that the value, prestige and recognition for these curricula can be predictively bettered when there is an effective public relations program. Second, the administrator could start by an evaluation of the public relations effort of his own college to determine if there exists a well-planned and systematically organized public relations program that practices:

(1) professional articulation with "feeder" secondary schools?

(2) participation in authoritative community occupational surveys?

(3) utilization of advisory committees to the maximum extent?

(4) thorough development of curricula so that we are widely endorsed by industry?

(5) reputable student guidance and admission standards consistent with the requirements of the program?

(6) careful selection of guidance and instructional-staff personnel that are "respected?"

(7) job placement procedures for the best interest of student and community?

(8) continuous self-evaluation of training efficiency and follow-up studies utilizing employer and student opinion questionnaires?

(9) essential contacts with local chapters of recognized technical societies?

(10) good relations with non-industrial publics in our communities -- service clubs, P.T.A., governmental bureaus, state employment office, among others?

(11) assignment of administrators and supervisors of occupational programs to specific areas of responsibility in school-industry relations?

There are many public information practices and public relations devices or media that an enterprising administration and a creative faculty might consider as they jointly plan for exploiting the college's occupational programs. The principal ingredient to the successful program is administrative-faculty cooperation. A few of the acceptable devices are:

(1) Initiate institutes or workshops for high school principals, counselors, and chairmen, so they become more alert to occupational reality and opportunities.

(2) Print and distribute colorful training information brochures to all junior and senior high school counselors' offices in the area.

(3) Arrange visitations of secondary school groups to industry or to fairs and to conventions.

(4) Encourage business leaders and others to grant industrial scholarships for deserving technical students.

(5) Administrative representatives attend meetings of technical societies.

(6) Hold an industrial fair for the high school counselors and students.

(7) Promote a local ten-day period, career information center for parents and students supported by business and industry.

(8) Encourage the development of an Industry-Education Council for establishing a clearing house for cooperative school supports.

(9) Develop achievement recognition programs for high school students.

Summary

It is well recognized that this discussion has considered only a few of the many aspects of administration for technical education. Throughout the paper an attempt has been made to imply that the technical educator is far more than an executive. He must be an inspired leader who is capable of "selling" the program to the community while "buying" cooperation within his own organization.

As administrators look ahead and gear up junior college organizational purposes, communications and willingness of their faculty to serve the activities required, they might be impressed with vision and wisdom of Edmund Gleazer, Jr., who in making a speech on the topic, "The Golden Age of the Junior College," stated:

"We talk many times about people not having a sense of motivation when they get into our great universities and colleges. They are not sure what they want to do. I don't blame them for this. The World and the economy is becoming more complex all the time. We should get those people into a kind of situation where they can give their attention not only to book-learning but where they can learn something about working with their hands. They are not making a life-long commitment. But they can make an entry into a respectable job. They begin to get a sense of motion and movement and with this sense of movement, hopefully, eventually, there comes not only motivation for learning but there comes a sense of direction. We are long past the time in this country when one prepared oneself for life; then it was all over. Now, one starts the educational process and gets into a job, but he must have educational resources available to him.

In this country we've got to make it possible in every community to have a great educational resource-center so that people can be prepared for job-entry. When they come up against a new opportunity, a new position offered, something else they want to do now, or a problem, then they have the opportunity easily to take advantage of whatever educational resource would be necessary to move along with this opportunity."

References

1. Brick, Michael, Forum and Focus for the Junior College Movement, New York: The American Association of Junior Colleges, Bureau of Publications, Teachers College, Columbia University, 1963, pp. 111-112.

2. Lombardi, John, Emergent Issues in Community College Administration in Our Changing Society, "Emergent Issues in Junior College Administration," Conference sponsored by University of Washington, Seattle, May 1964, p. 55.

3. Medsker, Leland, The Junior College: Progress and Prospect, McGraw-Hill, New York, 1960, p. 180.

4. Blocker, Clyde E., R. H. Plummer and R. C. Richardson, Jr., The Two-Year College: A Social Synthesis, Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1965, p. 179.

5. Parsons, Talcott, Structure and Processes in Modern Societies, The Free Press of Glencoe, U.S.A. 1963, pp. 19-33.

6. Dodds, Harold W., The Academic President-Educator or Caretaker, McGraw-Hill Book Company, Inc. New York, 1962, p. 2.

7. Stokes, Harold W., The American College President, Harper and Row Publishers, New York, 1959, p. 15.

8. Selznick, Phillip, Leadership in Administration: A Sociological Interpretation, Harper & Row Publishers, New York, 1962, pp. 62-63.

9. Henderson, Algo, Policies and Practices in Higher Education, Harper & Row Publishers, New York, 1960, pp. 219-220.

10. Woodburne, Lloyd S., Principles of College and University Administration, Stanford University Press, Stanford, California, 1958, p. 24.

11. Capen, Samuel P., The Management of Universities, Foster & Stewart Publishing Corporation, Buffalo, New York, 1953, pp. 79-80.

12. Ferry W. H., An Address Before California Junior College Association, Spring Conference, Santa Barbara, California, May, 1965.

References continued --

13. Lombardi, John, "Vocational Education in the Junior College", School and Society, Vol. 73, April 14, 1956, pp. 225-228.

14. Lange, Alexas F., School and Society, "The Junior College - What Manner of Child Shall This Be?", VII, February, 1918, pp. 211-216.

15. Brick, Op. cit., p. 119.

16. Blocker, Op. cit., p. 202.

17. DuBridge, Lee A., Automation and Technological Change, Educational and Social Consequences, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1962, p. 40.

REACTIONS, RECOMMENDATIONS AND RESEARCH PROPOSALS

for

TECHNICAL EDUCATION AND ADMINISTRATION

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Although the following comments deal with a variety of subjects, organization appeared to be the one central theme which pervaded the discussion. The internal organization of colleges or sub-units within colleges is the most dominant aspect of this theme.

It was agreed that any organizational structure should achieve, or make possible, two primary outcomes. First, technical education must be equal with other identificable facets of the college program. Although the reality of this problem is recognized by everyone connected with technical education in community colleges, the existence of a few exemplary institutions indicates that equality can be achieved. Second, the technical education program must be integrated as thoroughly as possible with the rest of the college. This has obvious implications for curriculum planning and staff utilization. Also, integration and equality are related. In general, where one is found to exist, the other is likely to occur. Any attempt to maximize one must, however, take the other into consideration. For example, some of the most obvious techniques for achieving equality can levitate against the achievement of integration.

President Wilber's discussion of administrative structure and organization elicited the above mentioned reaction. The more traditional concept of organization results, quite often, in separate technical or occupational areas within a college. Even if these separate areas are administratively directed by persons of intended equal status, equality is not likely to result since such a bifurcation of the college makes the integration of programs and staff quite unlikely. Even though a few institutions can be pointed out as examples of the success of such organization, the overwhelming accumulation of evidence would seem to indicate that an obviously direct approach to the achievement of equality cannot be expected to fully achieve equality, unless provision is also made for integration.

Another traditional approach results in occupational programs being placed at a lower level in the organization than other parts of the college program. For example, the administrator in charge of technical and/or vocational education might be an assistant dean or director under the supervision of a dean of instruction. Such structures obviously imply a degree of inequality. Although no deliberate attempt at integration occurs from this organization. Thus, smaller units are involved and integration is more likely to occur among smaller groups than larger groups.

Nevertheless, evidence does not support the chances for success of this type of organization. It has often been said that any organization will work if you have the right people and that no organization will work if you have the wrong people. In reality, it is not, of course, this simple. The "right" organization (or the wrong one) can have some effect on the people within the organization. Those familiar with community college staff and organizational structures are probably more aware of the opposite type of reaction in which the characteristics of people, particularly faculty members, influence the organizational structure. In general, it can be said that this interaction between organizational structures and the characteristics of staff members must be taken into consideration.

It was also recognized that the "ideal" organization for a college cannot be determined by strictly internal considerations. For example, state governmental regulations may determine certain aspects of the college organization or set certain restrictions. In many states the methods by which federal funds for occupational programs are disbursed dictate certain aspects of the college organization, or require the presence of certain identifiable positions, or require that persons holding certain positions have certain characteristics. These requirements and restrictions are often completely unrelated to the tasks colleges are attempting to achieve.

In preceding chapters the problem of "image" was treated and in fact pervades this entire publication. The image of technical education, as seen by various publics (faculty, students, parents, employers), is primarily the responsibility of the college administration. Anyone can quickly recognize that this is one instance in which responsibility and authority are not matched. A college administrator obviously has the primary responsibility for image (The "buck" has to stop somewhere.) but no amount of authority can "dictate" image. The image which society has of its members, especially those individual characteristics pertaining to occupation and types of training, seem rather immutable. Within a smaller context, such as an individual college, the problem is not as impossible as it seems to be in the larger context. The utilization of advisory committees, public relations techniques, and in fact the entire college staff, has some bearing on the image of the college.

This entire area of consideration is riddled with problems and dilemmas. If an advisory committee is to serve this function as well as provide expert advice for curriculum, placement, staffing, etc., some conflict of interest is likely to develop. The type of advisory committee members to be selected obviously depends upon the relative emphasis within these two potentially conflicting areas. If it is desirable for faculty members to assist in various ways with the image-building public relations procedures, how may they do this without detracting from the quality of the educational program? The selection of faculty members, especially in the technical areas, and the "job assignment" for them, is greatly complicated if they are expected to function in both areas.

Recommendations

Concerning administrative structure and organization, many of the recommendations were proposed as ways to achieve equality for technical programs and to promote greater integration of technical programs and staff with other programs in the college. In general, these recommendations reflected a desire to break away from "traditional" structures (i.e., traditional patterns in junior colleges, other institutions of higher education, secondary schools, business or public administration, etc.) and develop organizational structures relevant to the jobs community colleges are to achieve, the unique characteristics of the institutions, their staff members, and relationships with communities, other institutions, etc. A willingness to experiment and objectively evaluate the results of the experimentation was strongly urged.

Two organizational structures were proposed as potentially profitable departures from the two general traditional patterns discussed in the previous section. Both of these proposed organizational structures are outgrowths of the more traditional patterns, but each attempts, in different ways, to minimize the disadvantages and maximize the advantages of the two general traditional patterns. Greater equality and integration are likely outcomes.

The first of these proposed patterns is related to the bifurcated structure discussed by President Wilber. The college would be divided into two areas, each administered by a second line administrator directly responsible to the chief campus administrator. These two administrators might be called Dean of General Studies and Dean of Occupational Studies. The third level within the organizational structure would be comprised of divisions, primarily identifiable as belonging to the general studies area (Science and Mathematics, Humanities, Social Sciences, etc.) or the occupational studies area (Electronic Technologies, Engineering Technologies, Health Sciences, etc.) Thus far the structure is similar to the bifurcated structure discussed earlier, but the unique element of this proposed pattern would be the absence of singular line relationships between divisions and the deans. For example, the Health Sciences division would not be singularly responsible to the Dean of Occupational Studies, but would be responsible to both deans. Similarly, the Social Science division would not be responsible to just the Dean of General Studies, but to the Dean of Occupational Studies as well. In effect, this would force the two deans to operate as a team and would avoid the "segregation" that is likely to occur in the completely bifurcated structure. This structure is related to one proposed by Blocker, Plummer and Richardson.

This structure would have obvious advantages and disadvantages. Equality is implied since the two administrators would be at the same level in the structure. By breaking down the singular line relationships, integration would be promoted. For example, if the Engineering Technology division felt that it required a particular type of mathematics course for one of its programs, the division administrator and appropriate faculty members could go directly to the Dean of General Studies and the division and/or department responsible for mathematics instruction. The difficulties of staff members having responsibilities in both areas would be alleviated. An example might be mathematics instructors who would have loads consisting of regular college algebra and special mathematics courses required by technical programs.

This proposed structure seemingly violates one of the "laws" of administration: that any one person should have one and only one superior to whom he is responsible. This "law" was classified by many of the delegates as a tradition to be questioned. It was generally observed that traditions should not be followed simply because they are traditions, but that the choice should be determined by the effectiveness with which the desired outcomes are achieved. It was recognized, however, that in order to avoid potential personnel difficulties, the functions for which deans and divisional administrators are responsible would require a high degree of specificity. The functions of the Occupational Studies Dean, division adminstrator, and individual faculty members, as they pertain to technical programs, would have to be clearly defined and delineated from the functions that the same division administrator and faculty members might have in common with the General Studies Dean. In effect, each division administrator would have only one boss for one particular function.

A second pattern of organization departs entirely from the general versus occupational, transfer versus terminal, liberal arts versus technical, etc., type of bifurcation. In this proposed organization, the divisions would not be identifiable as either general or occupational. They would be responsible to only one administrator, perhaps a Dean of Instruction.

This organizational pattern departs from the traditional structure with one instructional administrator, in that there are not separate divisions identifiable as either technical or occupational. Instead, the faculty members in the technical fields would be "integrated" as departments in appropriate divisions. For example, programs in health technology fields might logically constitute departments in the Life Sciences division. Programs in electronics might be represented as departments in the Physical Sciences division.

Several advantages are obvious. The likelihood of "segregation" and unequal treatment of technical programs and faculty is greatly decreased. Greater integration is implied. This structure almost guarantees greater communication among staff members, especially as these communications pertain to task areas. The extent to which this integration occurs physically, in terms of offices, physical plant layout, etc., would obviously relate to its effectiveness.

Any inequality would almost have to be at a personal level with this type of structure. In effect, the "separateness" of technical programs should cease to exist. This type of structure obviously places responsibility at a lower level and creates greater demands and responsibilities at lower levels in the organization. Likewise, this requires greater skill at definition, delegation and supervision at the upper levels of the organization.

Research has shown that faculty members, particularly in the academic areas, tend to have equal or greater allegiance to their disciplinary areas than to their institutional affiliation. Informal communications and organizations also tend to follow these disciplinary directions, due to the more obvious visibility of common interests and concerns. This proposed structure should permit academicians and "occupationalists" to share and develop broader common concerns. The initial establishment of such a pattern will undoubtedly be accompanied by a certain amount of discomfort, tension, misunderstanding, etc., since people would be placed in close contact with "different" types of persons than they have associated with in the past.

Concerning extra-college influences upon the college, most of the recommendations indicated that greater autonomy for community colleges was necessary. By various means it was suggested that the federal government should recognize the differences between technical education in community junior colleges and related programs in other types of institutions. This recognition should be made evident in forthcoming legislation and regulations.

There was general consensus that some central authority at the state level should represent community junior colleges on equal ground with other segments of higher education and public education. A separate state board for junior colleges was proposed. The continued necessity for local boards, however, was emphasized. It was recognized that if community junior colleges are to remain community institutions, a viable means for local control and liaison must be maintained. It was also recognized that community junior colleges, whether represented by separate state boards or not, must be at least as politically independent as other segments of the educational establishment, and must be free of domination from other segments, particularly higher education. In general, it was felt that the most effective locus for efforts in this area would be at the federal level, perhaps through the American Association of Junior Colleges.

In contrast, most of the recommendations relating to public relations, advisory committees, and community liaison activities implied more localized endeavors. The desirability of national advertising campaigns to develop a desired public image for community junior colleges was discussed, but it was recognized that such activities would eventually depend upon local efforts if they are to succeed. Although these recommendations took many specific forms, they had in common the desirability of increased interaction by individuals from the college faculty with individuals from the community, business, industry, etc. College personnel should participate actively in community endeavors related to their program areas. For example, it was suggested that faculty members might be involved in "work internships" in the community. An electronics instructor might spend a summer working in a local electronics firm rather than teaching summer session or taking advanced courses in a local university. For smaller colleges, without fully developed summer programs, such plans have obvious implications for faculty compensation.

Similarly, community personnel with expertise in appropriate areas can be brought to the campus for conferences, work sessions, as instructors, etc. Advisory committee members can be utilized to promote the "image" of technical education in general. In many instances, such persons can have greater impact upon segments of the public than persons officially associated with the educational enterprise.

Greater interaction with the community could result in a wider variety of off-campus experiences for students. Increased educational benefit could be derived from programs such as the work-study program if more interaction and planning were done jointly by educators and appropriate community personnel.

In general, it was felt that the public relations activities should make greater use of advisory committee members and all of the college staff (not just public relations persons, administrators, etc.) and that increased person-to-person interaction is likely to be more immediately effective than activities conducted through local news media. An expansion of public media activities, especially at the national or regional level, was urged, however.

Research Proposals

Many of these proposals, especially those related to the previously identified problem areas, are of a basic nature, as opposed to applied or institutional research, and due to their interrelationships could best be placed within the framework of a more comprehensive project rather than being studied separately. The most obvious of these comprehensive projects relates to the problems of organization and structure. It was not proposed that the "best" organizational structure be found, but that criteria be developed by which any individual institution might select its own "best" structure, taking into consideration its objectives, limitations, community environment, etc. This comprehensive research project might consist of the following coordinated sub-projects. The sub-projects imply a chronological ordering but many of the projects could proceed simultaneously and certain phases of the projects would by necessity have to overlap if a coordinated and tightly structured research design is to result.

The objectives of technical education, as well as other aspects of the college program, must be more specifically defined. Ways must be developed by which the achievement of these objectives can be measured. This project should not only be concerned with the definition and measurement of relevant areas of student achievement, job performance, etc., but should be concerned also with large scale institutional measures. For example, in terms of the student population which the college serves, to what extent is human capital increased? This requires an examination of the problem which has long plagued economists but to which they have recently addressed themselves with much interest: What are the economic returns to differing education investments? In institutional terms this would involve a determination of the relative value to be placed on successful students in different programs as well as drop-outs, academic failures that cannot be "persuaded" to take appropriate programs, etc.

Research efforts should be directed toward the identification and classification of various organizational structures existing in community junior colleges. The common and unique features of various organizations should be made evident. These should include present as well as proposed organizations, and yet to be developed experimental organizations. These studies should involve formal and informal structures, communications, extra-college determinants, multi-campus structures, as well as single campus institutions, etc. The extent to which organizational characteristics and the characteristics of individuals interact should be more accurately assessed. Such studies would of necessity deal with the entire institution and thus are related to topics discussed in other chapters.

Given more accurate assessment of the achievement of educational programs, particularly technical programs, and more empirical examination of organizational structures in community junior colleges, additional studies should be undertaken to see how these two areas are related. The effects of various organizational patterns and characteristics of an institution upon its students and its contribution to the community should be assessed. This study would of necessity involve an intensive examination of college-community interaction, liaison and communications between the college and community elements, analysis and prediction and projection of community needs (particularly occupational needs). This area of study is obviously related to techniques and studies in other areas such as public relations, advertising, sales management, media research, and motivational research. It is exceedingly frustrating when the manufacturer of dog food can predict with some accuracy the results of actions he might take whereas a community college can develop a technical program in an area of obvious need and have "unexpected" difficulty in obtaining students.

One of the most emphasized research areas pertained to faculty attitudes. This can be considered a separate study but obviously is related to the previously mentioned sub-project concerned with administrative structure and organization. The nature of this research area can perhaps be best described in terms of specific questions. These questions involve primarily positive and negative attitudes held by faculty members toward faculty, students and program content in occupational areas, particularly technical areas. How and when are faculty attitudes formed? Are there steps which might be taken in the education and selection of faculty members which might result in more positive attitudes and fewer negative attitudes? What things can be done to change faculty attitudes after they are employed in comprehensive community colleges? This proposed research area does not imply that the identification and classification of attitudes as positive and negative is to be taken for granted. For example, it is not the role of the administration to define what is to be regarded as positive and negative. Rather, the processes which result in the formation and change of attitudes toward characteristics of comprehensive community junior colleges by those operating in such institutions is the primary concern.

These research "proposals" are, of course, far from specific. Much additional work would need to be undertaken by trained researchers and practitioners before researchable questions could be developed. In fact, much of the needed "research" work appears to be concerned with the identification of techniques which might make these problem areas more researchable. Due to the structure of the conference, which functioned much as a "sluice box" for the many problems and ideas that were generated, the importance and urgency of these problems can be assumed with safety.

CURRICULUM AND INSTRUCTION IN TECHNICAL EDUCATION

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If the junior college belongs to any era, it is to the span of the next three decades. The past has seen the infancy of the junior college; the present views its growth with surprise, and perhaps even a little alarm in some quarters; and the future's vision is as yet unknown as we look toward the 21st century. The next thirty years will be years of innovation on the one hand and maturation on the other; years of stress and strain, of potential and promise, of fruition and fulfillment.

What will these years be like? What new scientific discoveries, what new societal forces, what new economic drives, what new cultural patterns will emerge and shape this nation and its institutions? Some consideration of these questions is germane to the inquiry we are making at this conference into the directions which junior college technical education should be taking. At the outset, let us look briefly at what the future may bring.

Thinking about the future has become such an integral part of science, engineering, economics, and government, that nearly a billion dollars per year is currently being expended on what amounts to expert crystal ball gazing by professional "futurists" in the U.S. Well known "think companies" like the Rand Corporation, Tempo (Technical Management Planning Organization), Resources for the Future, and Stanford Research Institute are utilizing the best scientific and philosophical minds of the nation in the fascinating art of forecasting the future. Here are some of the images they see in the crystal ball for the year 2000 A.D.

People

In spite of the pill, the U. S. population will have risen to 330 million, a net increase of about 75 percent over today's 195,000,000. Nine out of ten Americans will live in cities or their suburbs. Unskilled jobs will have virtually disappeared, and today's mechanization and automation will bear about the same resemblance to the automation and cybernation of 2000 A.D. as the Model-T Ford does to the 1966 Lincoln. People will still "work", but the work will be less manual, more cognitive; less muscular, and more cerebral. One's brow may sweat, but not to earn bread; one's muscles may ache, but from play not work. There may not be enough work to go around, and one of Tempo's "futurists", John Fisher, has remarked that, "by 1984, man will spend the first third of his life.......getting an education, only the second third working, and the final third enjoying the fruits of his labor......Moonlighting will become as socially unacceptable as bigamy."[1]

Food

"Think men" at Stanford Research Institute conceive of automated kitchens in which the housewife will "program" a week's menu on tape, stack all the food in selected storage spaces, set the programmed clock for the hour meals are desired on given days, and then just round up the family at the proper time. Rand experts have been giving increased attention to food production problems versus overpopulation, and it is their considered opinion that the gloomy predictions of impending world-wide famine are ill-founded. With intensive cultivation of ocean "farms"--herds of fish and millions of watery acres of protein-rich kelp and related water plants--the world's food supply could easily be tripled, in the face of a possible doubling of the population from the present 3 billion to 6 billion by the turn of the century. Not only will sea farming be exploited, but far more intensive agricultural use of land areas can be made. If all the world's arable land were farmed as intensively as the Japanese and the Dutch farm their small plots, food production on land could be increased five-fold, according to Oxford agronomist Colin Clark.[2]

Transportation

You still won't be able to find a place to park in the year 2000 and freeway congestion may not be a thing of the past, but great advances will be made in rapid transit. Underground and overhead highways will multiply. Rail traffic will probably make a comeback in the next decade, with monorail equipment for short runs, and 150 mile-per-hour trains on conventional tracks for longer runs. New high speed (supersonic) passenger aircraft are already being tested, and huge planes carrying 1000 or more passengers will span continents and oceans with fares much reduced under present-day rates. By the year 2000, ballistic rockets may whisk passengers from New York to Rio in 30 minutes. Improved versions of helicopters will shuttle passengers from rail stations to airports to space ports and from the inner city to suburban stations. Even the far-out thinkers discount the idea of scheduled trips for the lunar vacationer, but there is a good measure of agreement that the moon will have a permanent space-port, and that men will have landed on both Venus and Mars by the time the New Year's horns blare to herald the 21st century.

Health and Longevity

Nonagenarians will be a common sight by the year 2000, and the biblical life span of three score and ten may have been advanced to four-score. Bacterial and virus diseases will have come under a considerable measure of control. Cardiovascular disease will be susceptible to vastly improved methods of treatment, and many medical researchers feel that the enigma of cancer will have been solved before the middle '90's. Workers in the field of genetics are confident that DNA research will be sufficiently advanced that, in the words of Hudson Hoagland, executive director of the Worcester Foundation for Experimental Biology, "man will become the only animal that can direct his own evolution."[3]

Man Versus Man

If these and other equally dramatic changes come to pass in the next three decades, where will man find his place with other men? Does each new man on earth diminish perceptibly the individuality of other men? As man is no longer driven to fight the wilderness, or to ease out his living by toil; as disease and poverty come to be feared less, what will replace these drives and fears? If indeed, man comes to control his own destiny and even his own evolution, what wil be the moral character of his response? If, in truth, to paraphrase Shakespeare, the uses of adversity are sweet, what happens to man when most adversities are removed? Does man himself then become the only adversary?

To these questions the futurists have few answers. The world's religions, at diverse times and places, have seemed to offer some guidelines, but the codes have been almost as different as the religions themselves. You and I live in an age and work in a profession in which there is growing acceptance of the thesis that education may be the referee in the confrontation of man versus man. This hypothesis (and it is an hypothesis) is being tested today on every college campus in the nation, and it will be even more rigorously tested in the years ahead. You may well find the answer in the next decade. The junior college movement, in the words of Edmund Gleazer, "is where the action is," and the next thirty years will determine whether the junior college action will have a significant impact on the great issues of our time.

If education, and specifically junior college education, is to reach this level of rising expectations, we as junior college educators have a sizable task ahead of us. Happily, not all of the job is the responsibility of the junior college, and even the segment which is the junior college task is further subdivided as we consider our specific tasks in technical education. Let me emphasize, however, that in terms of numbers of youth to be served, ours is an educational challenge of tremendous magnitude since the educational programs we are considering here are consistent with the abilities and interest of at least fifty percent of high school graduates.

The central focus of this paper is intended to be on curriculum and instruction in junior college occupational education. To sharpen the focus, let us begin with the following definitions:[2]

1. Occupational Education refers to any and all education and training offered by junior colleges aimed at preparation for employment, as distinguished from curriculums in the liberal

arts, the fine arts, or the humanities. "Occupational education" covers professional, semi-professional, technical and skilled-level curriculums for all fields, (eg., agriculture, business, industry, health, home economics, public service) of employment.

2. Semi-professional Education is represented by formal curriculums leading to the associate degree and designed to prepare the student for employment in career fields recognized as nearly professional in status. Some examples: engineering technician, medical technician, architectural draftsman, business data programmer, and associate degree registered nurse. Semi-professional workers usually work in close cooperation with and perhaps under the direct supervision of a professional person.

3. Technical Education is a term which is just beginning to acquire meaning in this country. There is no unanimously accepted definition of the term. For the purposes of this paper, however, technical education --

    a). Is organized into two-year curriculums at the college level.
    b) Emphasizes work in the field of science and mathematics, and frequently, but not always, is related to industry and engineering.
    c) Gives much attention to technical knowledge and general education, but also stresses practice and skill in the use of tools and instruments.
    d) Leads to competence in one of the technical occupations, and usually to the granting of an associate degree.

e) Includes a core of general education courses (English, humanistic-social studies, liberal arts) up to perhaps one-fourth of the total credit hours.

In the light of these definitions, the discussion to follow will not be limited to technical education alone as above defined but will range across almost the entire spectrum of occupational education, the professional occupations only, being excluded.

Curriculum Development

Prior to initiating occupational education curriculums or courses, two essential steps are necessary: (1) determining need and (2) determining capability.

Steps in Determining Need: Local needs of employers can best be assessed by making a comprehensive occupational survey, followed up by "spot" surveys as needed to explore specific areas in depth. Techniques for such surveys are already well known, and no purpose would be served by detailing them here. However, a few guidelines are worthy of emphasis.

1. Such surveys should have a carefully developed research design and should be staffed by professionals who understand the methods to be pursued and the pitfalls to be avoided.
2. Advisory committees of informed lay citizens should be a part of every such survey. Such committees should be comprised of persons at several levels of responsibility -- not just vice presidents, owners, and managers.

3. The requirements for employees, in entry jobs should be determined, and the specific knowledge and skills required should be ascertained.
4. A definite attempt should be made to find out the level of general education, or the common learnings, required for success and promotion on the job.
5. Not only must potential jobs be identified, but the numbers of qualified students interested in specific educational programs must be accurately estimated.

Regional needs: can usually be determined from studies already made by other agencies such as chambers of commerce, planning commission, interstate compacts, state employment agencies, and employers' associations, chain banks, and similar groups.

National needs: are readily identifiable from the publications and reports of the U. S. Department of Labor, the National Science Foundation, the National Institutes of Health, the U. S. Chamber of Commerce, associations of manufacturers, the President's Manpower Reports, the U. S. Office of Education and similar agencies.

Determining Capability: If there are unfilled manpower needs and a sufficient level of student demand, the test of capability should be applied. Capability has two essential features--staff and facilities--and both of these can perhaps be melded into one--fiscal capability.

Occupational education programs of high quality require a sound financial base. Per-student annual operating costs run from $800 to $1600 annually, as whom never return to participate in bettering the community which gave them their start. Such communities are engaged in the peculiar enterprise of investing in an export product for which they receive little return. In contrast, a high percentage of occupational program graduates settle down in their local community and participate effectively in its growth and development.

2. Although occupational education programs do cost more than academic programs, it should be noted that after two years the graduates of these programs move into the economic life of the community and start producing wealth; while the "transfer" graduate has two, three, or even more years of further education ahead of him, most of it also at public expense, before he becomes productive in some other place.

Capability, then, implies availability of funds and facilities; and availability of qualified faculty. There is never an ample supply of either commodity and consequently priorities must be established and goals set, which are consistent with the ability to realize them in given time periods. Junior colleges would do well to heed the following maxim: Welcome diversity within the context of quality, but avoid proliferation at the expense of quality.

Cooperative Faculty Planning: A college accomplishes its educational goals through its faculty. Planning and teaching are not separate functions--they go hand in hand. The role of administration is not solely to plan, but to encourage and assist faculty in planning. Within this philosophical framework, many junior colleges have continuing curriculum committees whose compared to a $500 to $750 unit cost for academic or transfer programs. Capital investment requirements for some occupational programs are enough to shake the resolve of the most dedicated of boards of trustees. A few examples will suffice for illustration, with the cost of a "standard" classroom for academic courses listed first for comparison.

Standard classroom with tablet arm chairs	$ 25,000
Mechanical technology lab, completely equipped;	80,000 to 150,000
Dental assistant lab, with 10 stations	75,000
Electronics lab for advanced work; 20 stations	125,000
Suite of five rooms and labs, completely equipped for business education	200,000
Data programming and computer lab (equipment purchase basis)	250,000

Many board members and not a few faculty will demur when faced with costs like these. When funds are short of the amount necessary to meet a comprehensive educational program there will always be those who will say, "Why spend these huge sums of money for occupation-bound students, when we really don't have enough money for the 'good' students?" The liberal arts mystique almost takes the form of an arm band for many persons on and off junior college faculties. They wear it with such smug pride that it appears they must have forgotten two very essential factors:

1. The single-purpose, academic-liberal arts oriented junior college serves the needs of only about one-third of the high school graduates of the community. And what does it do for them? For one thing, it prepares them to leave town. It acts as a one-way valve through which flows a stream of bright and able youth, most of

membership includes the deans, division chairmen, the guidance director, and a half-dozen or more members at large elected by the faculty. Such a committee does not merely approve _courses_; it initiates, plans, and approves curriculums. Within broad policies established by the board of trustees, it helps plan and establish priorities for curriculum development.

Integration of Curriculums: Two overriding principles should govern curriculum development for junior college occupational education:

1. "Job training," _per se_, is not the purpose of associate degree programs. The more important of the two words "occupational education" is "education".
2. A junior college campus ought not to have two separate colleges under the same roof, with two separate student bodies and two separate faculties. A comprehensive junior college takes students where they are and prepares them for their next goal in life--be it matriculation at the state university, or caring for the sick in the general hospital. All students on the campus are college students, and curriculum planning should reflect this philosophy. All occupational education curriculums should present a carefully balanced "mix" of general and liberal arts education, theory and technical support courses, and specialized skill courses. The place of each of these in a total curriculum is a subject to which we now turn.

Curriculum Content--General Education and the Core Concept

The controversy between the academicians and the vocationalists has been long, acrimonious, and nearly always fruitless. These hoary protagonists remind me of the elephant and the whale who fell into an argument over which one possessed the greater strength. They never could settle it since the whale wouldn't come out on land and the elephant wouldn't go in the water. Is there a parallel here in the case of the history teacher who never darkens the door of the electronics lab, and the shop teacher who wouldn't be caught dead at a concert?

Time does not permit me to enter the lists, but I would like to suggest two premises on which we might agree.

1. The "liberal arts" as envisioned by Cicero--the studies for free and leisured man--may have been proper educational fare when only the free man had the leisure to think, plan, lead, and govern; and when the other 95 percent worked almost, if not quite, as slaves. Today, in America, in a society where all men are free and where almost all men work; where those with the greatest amount of education work the most, and where the best guarantee of leisure is a lack of education; where pastoral pursuits and a rigid class society have given way to a highly scientific, technological, and industrialized society with great horizontal and vertical mobility among classes--the liberal arts curriculum as a standard for all higher education leaves much to be desired.
2. By the opposite token, though we live in a technological society, man himself is not a machine. If higher education holds out hope for the personality and individuality of man, and I think it does, then all educational programs must incorporate some degree of

> confrontation between students and the ideas men have produced and nurtured through the centuries. Contemplation, I am convinced, is good for everybody--it should not be an exercise reserved for the elite few. I suppose it would be difficult to prove that a given amount of general education or liberal arts content in a two-year occupational education curriculum can produce any stipulated amount of insight into the problems of man and society, but if we have any faith in democracy as Adlai Stevenson defines it...."an irrevocable and final dedication to the dignity of man,"[5] an experience in general education would seem to be worth the gamble for all junior college students.

Let me therefore present some suggestions for the incorporation of a core of general or liberal arts education into curriculums of occupational education at the associate degree level. The following chart, although it suffers from the necessity to simplify a complex problem, will help to illustrate the concept being proposed.

Student Selection

A careful review of the proposed flow of students as indicated in the chart reveals two basic directions in which pre-counseled students may proceed. Fully qualified students may enter immediately into general education and basic core subjects. Those students with deficiencies move into a one semester developmental program. It is thus obvious that the "open door" college has many "closed door" curriculums. Granted that testing, interviewing and evaluation of past academic performance do not add up to an exact science of prediction, it is nevertheless indefensible to allow students to enroll in any curriculum or course which suits their fancy. Every college will have to set the end-product standards it will require for completion of its courses and curriculums. To a certain extent, these end-product standards will determine entry standards into courses and curriculums, since there are obviously limits to what can be accomplished in a two-year program.

Despite the gradual improvement of standardized tests, the best single predictor of college performance is still high school grades. Most certainly, however, high school standing should not be used as a sole criterion. Several measures for prediction are always better than one, and a philosophy of flexibility should govern the student selection process. With respect to standardized tests, several have been used long enough and widely enough to be of considerable value in prediction, when used in conjunction with other measures.

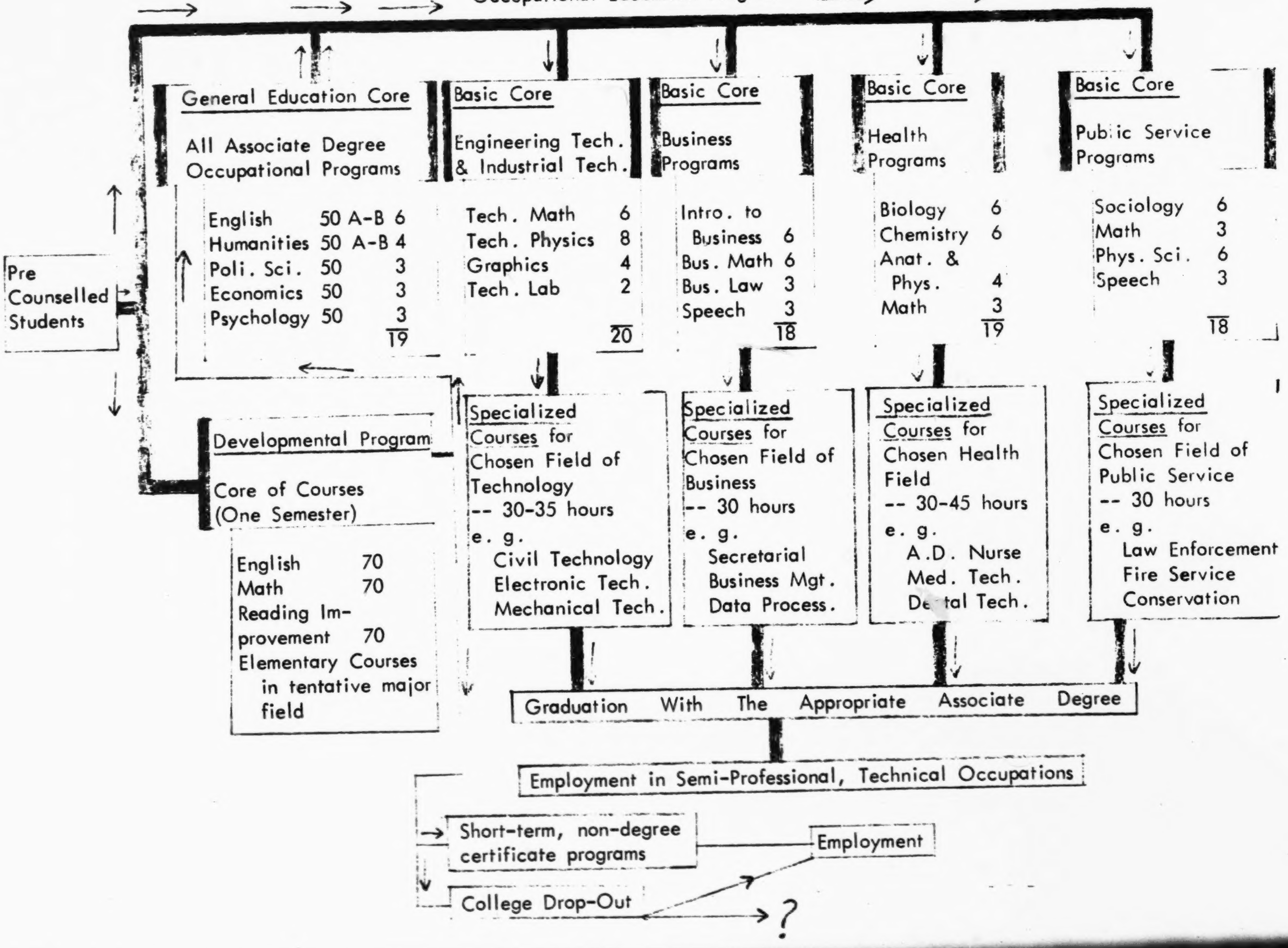
The School and College Aptitude Test (SCAT) gives a "verbal" and a "quantitative" score, and has national norms for college freshmen. The CEEB-SAT test, now given by nearly all high schools in the nation, also can be related to national norms. For technology programs the Iowa Tests of Educational Development, particularly ITED-2, General Background in the Natural Sciences; and ITED-4, Ability to do Quantitative Thinking, are reasonably good predictors of junior college performance. High school rank in class, combined with ITED-4 and the SCAT battery, have been used with considerable success for several years by the Los Angeles Junior College District in the selection of students for programs in engineering technology.[6]

Substitution of a suitable standardized test in the life sciences for the ITED-4 in the foregoing arrangement would result in a satisfactory basis for selecting students for the health technologies. A similar variation obtained by using a secretarial aptitude test is used by some junior colleges for placing students in various business education curriculums and courses.

There is a wide range, or difference in difficulty level, however, in junior college occupational programs. This range is so great that a junior college which claims to be "open door" will have to provide two or more levels of occupational education programs--some curriculums at the semi-professional or technical level, some at the skilled level, and perhaps some at the semi-skilled level. Let me illustrate with a reference to programs for technicians related to engineering and industry.

Many junior colleges commit a grave error as they plan technician curriculums. In their determination to be "academically respectable" (whatever that means) they plan programs only for engineering technicians, pitching them at a level of rigor which differs hardly at all from that of lower division engineering programs. Recently I was asked in as a consultant to help a junior college in the Middle West evaluate its technician program, which, in the words of the dean, "was dying on the vine." The program had been in operation for about seven years. Investigation revealed that the college possessed excellent facilities for technical education and a faculty of unusually high quality. The community was one in which the industrial and business complex needed many newly-graduated technicians each year. Technician enrollments in the regular-day program had reached a peak of about 90 freshmen and 35 sophomores in the third year and had declined steadily since then to a point where this past September only 38 freshmen and 18 sophomores were enrolled.

Suggested Core Curriculum Plan
Community College Associate Degree
Occupational Education Program


Pre Counselled Students
General Education Core
All Associate Degree Occupational Programs
English 50 A-B 6
Humanities 50 A-B 4
Poli. Sci. 50 3
Economics 50 3
Psychology 50 3
19
Basic Core
Engineering Tech. & Industrial Tech.
Tech. Math 6
Tech. Physics 8
Graphics 4
Tech. Lab 2
20
Basic Core
Business Programs
Intro. to Business 6
Bus. Math 6
Bus. Law 3
Speech 3
18
Basic Core
Health Programs
Biology 6
Chemistry 6
Anat. & Phys. 4
Math 3
19
Basic Core
Public Service Programs
Sociology 6
Math 3
Phys. Sci. 6
Speech 3
18
Developmental Program
Core of Courses (One Semester)
English 70
Math 70
Reading Improvement 70
Elementary Courses in tentative major field
Specialized Courses for Chosen Field of Technology
-- 30-35 hours
e. g.
Civil Technology
Electronic Tech.
Mechanical Tech.
Specialized Courses for Chosen Field of Business
-- 30 hours
e. g.
Secretarial
Business Mgt.
Data Process.
Specialized Courses for Chosen Health Field
-- 30-45 hours
e. g.
A.D. Nurse
Med. Tech.
Dental Tech.
Specialized Courses for Chosen Field of Public Service
-- 30 hours
e. g.
Law Enforcement
Fire Service
Conservation
Graduation With The Appropriate Associate Degree
Employment in Semi-Professional, Technical Occupations
Short-term, non-degree certificate programs
Employment
College Drop-Out
?

There were a number of issues related to the program's decline and impending demise, but the central core of the problem was the unreasonable rigor of the curriculum. The courses were actually pitched at an engineering level, not a technician level. Many courses required in the technician curriculum were the same courses as those taught for the transfer engineering students. Analytic geometry and calculus, general chemistry, and engineering physics were required in the first semester of the freshman year. Now there may be some localities where students who have the capacity to become graduate engineers will, for some reason or other, decide on a two-year degree and technician status, but that particular community is not one of them. I suspect that there are very few such communities. Technician jobs are, after all, middle-level jobs, and students of middle-level abilities should be able to succeed in technical courses. When they cannot, something is wrong and the error isn't with the students.

To be sure, engineering technician curriculums must include, at the sophomore level, applied calculus and certain other intermediate mathematics courses; and courses in physics, chemistry, mechanics, and electronics whose rigor approaches that of engineering courses; but students of middle-level abilities have to be brought up to these courses gradually, after a freshman year devoted to solid groundwork in technical-level mathematics and technical physics. The scope and sequence of these basic courses must be carefully planned, and preferably they should be taught by instructors with an engineering or applications approach, rather than by instructors possessed by "chemistry is chemistry" syndrome.

And most important, community colleges should provide two different levels of curriculums in the technologies, ranging from the engineering technologies across the spectrum to the industrial or highly skilled technologies, in order to accomodate the needs of business and industry and also the abilities and interests of students of middle-level academic potential. Exactly the same line of reasoning applies to business fields, the health technologies, and to curriculums in public service.

Occupational Programs and Secondary School Education: Many of the most troublesome problems for junior colleges begin in the high school. Secondary school curriculum planners seem unaware of the middle manpower spectrum and of the growing role of two-year colleges which offer programs of education and training for these jobs. Typically, high schools offer three tracks--college preparatory, vocational and general. The sad truth is that the "general" track prepares for nothing but graduation, the vocational track claims only ten to twenty percent of the student body and does not really prepare them very well for today's jobs, and the college preparatory track ordinarily succeeds in getting less than half of its graduates prepared for entry into baccalaureate degree granting institutions. A critical need in today's high schools is the introduction of a fourth track-- a junior college prep track, if you will--to prepare perhaps one-half of all high school students for entry into occupational education programs in junior colleges, technical institutes, business colleges, and similar institutions.

A small start has been made on "pre-technical" programs in selected California high schools, in cooperation with a technical institute in San Francisco,[7] and there is a beginning ripple of interest in some Michigan high schools, as an outgrowth of a research report recently completed at the University of Michigan.[8] The next five years should see a rapid growth of this kind of curriculum development in secondary schools, not only for technician programs, but for business, health, and other fields as well. However, it will take the leadership and persistence of technical educators and junior college administrators to move these projects.

"Balance" In The Occupational Education Program

For some years now, since Sputnik I courses across the heavens and caught us with our technology down, the technician has been the man of the hour. (Here I am using the word "technician" in the restricted sense-engineering and industry related). It is no accident that junior colleges, during the decade just past, have concentrated on the development of educational programs to prepare technicians for industry and engineering research. The demand has been greatest in this field, salaries for the graduates have been good, and the status image of the "sport collar" worker engaged in space research, or seated at a computer console, has been attractive. Studies and reports by such prestigious agencies as the National Science Foundation, the Engineering Manpower Council, and the Executive Office of the President have at one and the same time revealed need, and "promoted" new training programs. The National Defense Education Act of 1958 and the Vocational Education Act of 1963 both stipulated a national interest in technician training. But, after over ten years of continually expanding effort on the part of community colleges, technical institutes and university extension centers, the "technician gap" is still estimated to be nearly 35,000 per year[9] just for technicians in industry and engineering related fields. Consequently, there is still a pressing need for the establishment of new engineering and industrial technology programs and for recruiting more qualified persons to enroll in existing programs.

However, other actors in the junior college educational drama are beginning to claim a share of the center stage. Business education actually enrolls more non-transfer students in junior colleges than any other field. In spite of growing automation of the business office, never has the demand been greater than it is today for well-qualified secretaries. Although bookkeeping as we used to know it is a declining field of employment; accounting, particularly machine accounting, and business data programming are rapidly growing fields. Business management, as a field for two-year college graduates is also an expanding area of employment. Included under this generic heading are jobs in sales, purchasing, advertising, credit and collections, store management, and inventory control.

The "hottest item" in the junior college educational inventory today is the health technology field. Plagued by a shortage of doctors and nurses for over a decade, the health manpower situation is now being exacerbated by the advent of Medicare and other "Great Society" programs. Needed by the thousands are more registered and practical nurses; medical lab technicians; X-ray and electrocardiogram technicians; and technicians to support medical research. Although smaller numbers are involved, the need is nonetheless critical for dental technicians, histologic technicians, inhalation therapists, and psychiatric technicians.

These are the job titles by which we know these workers today, and training programs for these jobs are fairly well stipulated by state laws and by national and regional associations. However, junior colleges in curriculum planning must be alert to changes which may be imminent in many of the paramedical fields. Automation will have its impact here, especially if severe manpower shortages continue. The new "intensive medical care" concept in hospital wards, and the new instrumented and automated pathology laboratories such as the experimental one at John Hopkins, may be forecasting the winds of change in the paramedical field. The AMA-approved program for certified laboratory assistants is another innovation which suggests that we have to re-asses curriculum planning each year. Another occupational field deserves careful study and prompt action by junior colleges. Jobs in the public service are being up-graded to the point where two years of college may soon be the desired educational level. Law enforcement, fire protection service, conservation, social work, and even teaching, are all fields where associate degree graduates may soon find many semi-professional and technical-level jobs awaiting them.

Finally, the whole realm of the service industries (eg., restaurant and hotel management,[10] tourism, auto and appliance repair) is just beginning to realize the economic advantages of junior-college-trained employees, and junior colleges should be planning now to initiate and expand programs to train for jobs in these and other service industries. More glamorous jobs get all the publicity, but it is doubtful that there is any group of employers in greater need of well-trained employees today than the auto service garage owners of America. Junior colleges can, and many do, offer quality automotive service occupational programs.

The challenge to the junior college then, is one of diversity and balance. All colleges cannot serve all fields, to be sure, but sensitivity to real needs, and imaginative planning, perhaps on a regional basis, will enable the junior colleges of America to serve the manpower needs of the nation in a way they have never been served before.

Teaching and Learning--Faculty Recruitment

To the extent that we can stimulate learning by good teaching, we should be congratulated; but to the extent that we can get learning to take place without teaching, we should be truly commended. Reference will be made later to the critical shortage of qualified teachers for junior college occupational programs. There just are not, and will not be, in the foreseeable future, enough good teachers to staff our programs if we persist in the traditional methods of teaching and learning.

Where is the magic in a class size of thirty? Is wisdom diminished as the number of listeners increases? Is the impact of an idea lessened in inverse ratio to the size of the class? Common sense answers "No" to these questions and so do the results of much recent research. It would appear that there are only some kinds of class situations in which small class size is imperative. These might be:

1. Classes or laboratories where the instructor must engage in some tutorial activities, helping individual students.
2. Classes where the development of speaking ability or the participation level of the individual student is of primary consideration.

3. Classes where the instructor must demonstrate a skill, and then supervise while students practice the skill.

Other kinds of classes, those in which facts, ideas, and theories are to be presented, can be taught in much larger groups if provision is made for follow-up seminars, and outside-of-class learning by means of multi-media devices or educational technology. Probably the most inefficient class size in colleges today is the range from 30 to 60, and it is this range which is most commonly encountered. Such classes are too large for seminar work, and much too small to evoke the kind of high quality presentation we like to think all junior college instructors will give. In my opinion, the practice of meeting five sections of 30 students each, and giving the same lecture five times in the same week is a gold-plated guarantee of intellectual stagnation of the professor.

Every community college should have a "learning forum", an especially fitted-out lecture hall with every known device of educational technology, staff by audio-visual technicians, TV technicians, graphic arts technicians, and other teacher aides, in which 200 to 400 students could come together for the basic lecture, which the teacher gives only once, after thorough planning and rehearsal with his staff of aides. Depending on the subject matter of the course, provision should be made for small-group seminars, quiz section, skull sessions and the like, led by professional staff or perhaps by technical aides, and for an expanded program of learning outside the classroom with the use of films, autotutors, models, tapes, and of course books and the more conventional "library" materials. These materials should be readily available at several levels of rigor, and they must be easily accessible, perhaps in a facility where the atmosphere is not so "icy" as it so often seems to be in college libraries.

If we are right in assuming that good teachers will be in short supply in the years ahead, should we not be scratching our heads to find ways to allow the good teachers to come in contact with more students. I think students can learn more in large groups from a good teacher than they can in a tutorial from a poor teacher. We have been too concerned with getting enough teachers to fill our "standard" classrooms, and not concerned enough with modifying our spaces and providing modern equipment so that our great teachers can reach more students. Wisdom is a scarce commodity. I do not think we can afford the luxury of entrapping it in a 26 x 30 foot room with only thirty students.

There are implications here for campus planning, three of which are suggested:

1. Provide very vew "standard" classrooms. Instead, plan for one or more learning forums, several specialized lecture halls, many small seminar rooms, and of course the necessary laboratories and shops.
2. Realize that a library should be far more than a book collection, and plan it accordingly. Its concept should be one of availability of instructional materials, not one of custody and protection.
3. Provide not just one, but several "learning laboratories," strategically located in the several major buildings on campus, where students can come and go at will, using teaching machines, tape recorders, films, closed circuit television, recordings, and other aids to learning. These centers should be staffed at all times by competent technicians.

Recruitment and Training of Faculty: A "technician gap" of 35,000 graduates per year was mentioned in a preceding section as applicable to engineering-and industry-related jobs alone. Shortages in other fields are not as well-documented but estimates I have pulled together from a variety of sources indicate a paramedical occupations gap of at least 20,000 two-year graduates per year; a business occupations gap of 25,000; a public service occupations gap of 15,000; and a service industries gap of 25,000. These all total up to 120,000 new workers per year for the foreseeable future. Let us assume that junior colleges and technical institutes would set themselves the goal of providing just half of these graduates, or 60,000 per year more than we are now producing. Since attrition rates dictate nearly twice as many enrolled freshmen as the number who will complete associate degree programs two years later, there is an indicated need for 120,000 new enrollees per year (over and above present enrollments) for the foreseeable future. Translated into teaching faculty at a student-to-teacher ratio of 20:1, the immediate need for new faculty can be set at 6,000 qualified instructors -- some in mathematics, science, and supporting technical courses; some for general education courses; and perhaps 4,000 for specialized occupational courses. If, by some Herculean effort, the initial 6,000 could be recruited in the next two years, the ensuing annual demand, to provide for further growth in enrollments for retirements, deaths, and resignations for other causes, might settle down to a rate of about 1,000 new teachers per year for the period 1968-1975. It is emphasized that these projections are for staffing technical-vocational programs only.

Where will these teachers be trained? This is the single most critical challenge facing the community college movement as a whole. The American Association of Junior Colleges, with the aid of substantial foundation support, is turning its attention to the problem. A number of universities and state colleges are belatedly recognizing a responsibility for junior college teacher training. But the inertia of tradition is difficult to overcome. Somehow most teacher training institutions subscribe to the notion that training elementary and secondary teachers is their regular business and has first call on the general budget; and that training community college teachers is an "extra" job, which can only be attempted if "extra" money is available from grants or supplemental appropriations. Our task, and it will not be easy, is to re-orient schools of education and teacher education institutions so that the preparation of junior college teachers will become a recognized responsibility with a fair share of staff time and general budget allocation. Joint ventures between schools of education on the one hand; and schools and departments of engineering, business administration, nursing, medicine, and dentistry on the other, will have to be initiated. And the colleges of letters and science with their departments of physics, chemistry, mathematics, and the liberal arts fields will also have to be cultivated, so that a flow of qualified graduate students from these fields can be encouraged to enter community college teaching.

The kind of program now being started at the Midwest Technical Education Center, with its cooperating universities, may set the pattern for a nation-wide solution to the problem of junior college faculty shortages.

One further factor must be mentioned, and that is the necessity to establish conditions of faculty service in a manner which will not discriminate against instructors in occupational fields. The typical degree-and-college-credit-based salary schedules will have to be modified to recognize other qualifications which contribute to professional teaching. Faculty rank plans and paths to promotion will also have to be adjusted so that teachers whose performance merits it can move on up through the professional and salary ranks without regard to degrees and/or college credits. And, provision will have to be made to "hire in" at rank and salary levels commensurate with the attainment and reputation for excellence of those persons entering teaching from other fields of endeavor. These changes will not be easily brought about, largely because of resistance from the academic "types" on college faculties; but until we do make significant progress on these matters we shall remain in the ridiculous position of trying to recruit experienced engineers for the engineering technology faculty at salaries which are the going rate for new graduates of two-year technician programs.

Continuing Education for the Associate-Degree Graduate

With increasing frequency these days, the community college graduate, after working for a time, thinks of continuing his education. His employer may suggest it, better job opportunities which require further college work may beckon, or, having proved his scholastic ability by attaining the associate degree, the individual may now desire further education with the baccalaureate degree as the eventual goal in mind.

At present, upward mobility from a two-year occupational education program into a four-year baccalaureate degree program is not easy--in most states at any rate. Some states, however, are removing the barriers between the associate degree and the path on up to the baccalaureate degree. The Oklahoma State University, for example, has worked out a plan whereby graduates of two-year technician programs can move ahead toward a baccalaureate degree without excess loss of lower division credit. The University of Florida has recently announced a similar program leading to a baccalaureate degree for teachers of technology subjects. Ferris State College in Michigan welcomes junior college graduates of occupational programs and works out a degree program for them which minimizes loss of credit. Several states have excellent plans for graduates of business education programs who decide to enter a teachers' college in a business education teacher program. Some universities will evaluate junior college courses as to content and rigor and make a judgment on an individual basis as to the amount of lower division credit which may be allowed for these so-called "non-transfer" courses. Engineering technology graduates from New York's community college find it relatively easy to move ahead toward a degree in some of that state's four-year institutions. Records kept by New York's community colleges and Ag-Tech Institutes over the past ten years indicate that about one out of three graduates of two-year engineering technology programs eventually moves on to a baccalaureate degree.

Many graduates of associate degree nursing programs later wish the paths were open for further work and an eventual baccalaureate degree. At present they are not open, and in general the same thing could be said of most of the paramedical fields.

Mention was made of continuing education opportunities for two-year business graduates who intend to enter a business teacher education program. However, the same kind of opportunity is not open to those who would like to continue toward a degree in business administration.

Other fields in which little or no credit toward a baccalaureate degree program is ordinarily given for associate degree occupational education courses are: architecture, criminology, forestry, hotel and restaurant management, social work, journalism, and of course, the sciences and mathematics.

No pleas are being made here for any kind of "blanket" acceptance of credits from junior college occupational education courses. And most certainly I do not recommend sacrificing the kinds of experiences which really prepare for middle manpower jobs just for the sake of some (possible) college credits toward a baccalaureate degree. All we can hope for here, (and we can work for it too) is an increased flexibility on the part of universities and four-year colleges along with a willingness to evaluate students and courses on their individual merits rather than on a "transfer versus terminal" basis. I doubt that a national attack on this problem is feasible at the present time. It seems to me to be a matter which can best be solved at the state or regional level, by liaison committees working for better understanding between junior colleges and four-year colleges. Perhaps the AAJC and/or the Midwest Technical Education Center can point the way with some pilot programs in junior college--university articulation. The results of such efforts could then be disseminated nation-wide with ultimate benefit to junior college programs and junior college students everywhere.

Conclusion

Community college education for the 70's and beyond must respond to change. It must be re-cast in a form and substance which includes occupational education as a major function. All of the following factors must be dealt with as we plan anew for the permanency of change:

1. The increasing complexity of everyday life in all of its facets -- cultural, intellectual, and occupational.
2. The explosion of scientific and technical knowledge, the scope of which nearly doubles every decade.
3. The hard fact that in our society education stands between man and his job.
4. The impact of automation and the flow process industries on men and jobs.
5. The virtual disappearance of unskilled (common labor) jobs, contrasted with a critical manpower shortage in semi-professional and technical (middle manpower) fields, and the continually changing requirements in the "manpower mix" of a nation facing up to the future.
6. The realization that a "disaster gap" is already opening up between those Americans with advanced education and those with little education.[11]
7. Recognition of the fact that much, if not nearly all, of the occupational education of the future will have to be conducted at post-high school levels.

8. The urgent need in our society for millions of well-informed and well-trained citizens -- people who can both think and do -- and the gradual disappearance of the former bi-polar society in which the well-educated few did all the thinking and the poorly educated masses did all the work.

The needs of the nation dictate the necessity for an explosion in education and training for youth and adults, for all existing occupational classifications and for many new ones which we can only see dimly as we try to focus on the future.

The needs of youth and adults are summarized in the new relationship between man, education, and work. In a former day five percent of Americans dealt with ideas, and the other 95 percent worked! Today more than half the labor force "works" at jobs whose intellectual content demands education and training which can best be offered in colleges. Lack of education is today's guarantee of leisure.

Education is never terminal. Just as change is a permanent fixture of our society, so is continuing education the key to contined economic productivity in the decades ahead.

The educational program of the future must seek new directions. Emphasis must be put on education and training for middle-level youth and for the slow learner, as well as on education for academically superior youth. We cannot continue to put three-fourths of our junior college educational effort on the needs of one-fourth of the students. Middle-level youth in junior colleges outnumber "superior" youth by three to one. It is high time that we stopped neglecting their educational needs--high time that we stopped regarding occupational education as being somehow not respectable. The needs of average students are also the Nation's needs in this era of change. The junior college can serve all of its students and the Nation in the decades ahead. It is our challenge to see that it serves both well.

References

1. Quoted from *Time*, for February 25, 1966, p. 29.

2. *Op. cit.*, p. 30.

3. *Op. cit.*, p. 29.

4. Harris, Norman C., *Technical Education in the Junior College: New Programs For New Jobs,* The American Association of Junior Colleges, Washington, D. C., 1964, p. 21.

5. Quoted from *Time*, for February 1, 1963. From an address to the Center for the Study of Democratic Institutions, New York.

6. Los Angeles City School District. *Some Characteristics of Engineering-Technical Students in the Los Angeles City Junior College District.* District Research Report No. 248, Los Angeles, November, 1962.

7. See *The Richmond Plan,* a report of a cooperative study; Cogswell Polytechnical College, San Francisco, 1962.

8. Harris, Norman C., and Yeneso, William R. *Technical Education In Michigan Community Colleges,* School of Education, The University of Michigan, Ann Arbor, 1965.

9. National Science Foundation. *Scientists, Engineers, and Technicians in the 1960's,* NSF 63-64, Washington, D. C., 1963.

10. See *Junior College Programs For The Hospitality Field* by John M. Welch. published by the Council on Hotel, Restaurant, and Institutional Education, Statler Hall, Ithaca, New York, December, 1962.

11. Alvin W. and Helen P. Gouldner. *Educational Implications of Automation As Seen By A Sociologist.* In *Automation And The Challenge To Education,* National Education Association, Washington, D. C., January, 1952, p. 144.

REACTIONS, RECOMMENDATIONS AND RESEARCH PROPOSALS

for

CURRICULUM AND INSTRUCTION IN TECHNICAL EDUCATION

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One of the most rapidly growing units of our educational system is the community college. There is growing evidence that preparation for employment is, in all sections of the country, recognized as an important responsibility of the two-year college. In developing technical programs, however, adminstrators of community colleges will have to keep in mind certain important factors about the changing nature of work in the world of today and in the future.

First, there is the fact that the work world, including the processes of production, distribution, finance, and control, are becoming increasingly characterized by cognitive functions rather than muscular skills. This is made evident in the census statistics which show the lower skill level job declining as the white collar jobs increase. The amount of paper work associated with even the smallest of enterprises today dictates the need for a minimum command of communication and reasoning skill on the part of the lowest employee.

Another important characteristic of the work environment is the present availability of free or leisure time and the possibility of increasing such time through a shorter work week.

A final aspect concerns the individual's responsibility as a citizen. The pressing problems facing America as she is drawn into the position of world leadership require an informed citizenry. This is no longer a stateman's dream nor an educator's cliche. The sharp difference between the Western world of the haves and that of the have-nots of the underdeveloped countries and the collapse of space separating the two worlds makes imperative the development of novel and creative national policies. These by definition will tend to be disruptive of old values and practices. Therefore, they can only be successfully implemented with the support of a populace understanding the need for a change. Only through a general upgrading of all public education can this be attained.

The above information seems to make it clear that in the long run the most desirable characteristics in an employee from the point of view of the employer will be a background of general education, a willingness to accept continued learning and retraining, and a willingness to accept change and mobility.

The question then is more specifically, "What is the place of general education in the technical curriculum? What are the merits of academic versus technically related general education? What is the potential contribution of the core approach?"

It is most important that general education remain an essential component of the Associate Degree curriculum patterns. Job training per se is not the purpose of the degree programs. On the other hand, although business and industry would like new employees to have a higher level of general education and a concomitant greater potential for accepting responsibility and for subsequent promotion, the requirement for an entry job is the ability to do something and to do it reasonably well. All college curriculums should include a basic core of general education, perhaps amounting to one-fourth or even one-third of the total clock hours of instruction. But to say that the best preparation for a job is total immersion in the liberal arts, is pure sophistry. When corporation executives list general education requirements and human relations factors as being more important than specialized technical and vocational training, they are getting the cart before the horse. They are thinking of the people they've had to fire, rather than the people they want to hire. It may well be true that more people lose their jobs or fail to be promoted for reasons related to general education and human relations factors than for reasons related to lack of technical competence, but those people had to have a salable skill to get the job in the first place.

There are several approaches one might take to general education for community college students. One approach is that everybody take the same general education courses whether they are technical students or transfer students. If, for instance, a student is unable to handle freshman English, they take remedial work until they are able to do so. Another approach is that you have different levels of courses--one for the technical student and the other for the transfer student. Most of the discussants reacted against the latter approach and suggested it is better to think in terms of providing different kinds of courses to students with different kinds of abilities no matter what kind of program they are in. There are slow learners in the area of liberal education as well as technical education and the distinction should be made on individual student differences rather than on the basis of occupational versus liberal. As a matter of fact, perhaps occupational students need courses in humanistic studies more than the transfer student since the latter will get a good dose of the liberal arts when he goes on to the transfer institution.

The content of the programs presents a continuing problem. How shall the curriculum in particular occupational fields and institutions be determined? What is the role of the faculty and of the administrators? What role shall employers play in the determination of programs to be offered, facilities, curriculum, and the like? What is the role of the public and its representatives?

The question of the role of advisory committees in the development of technical programs evoked the most discussion. Consensus was reached that in addition to "V.I.P.'s", advisory committees should include "the plain guys who are holding down the jobs for which we train, and holding them down rather well." What is needed is to break the concept of interlocking directors of good doers who get to be on every committee. It was emphasized that it is necessary from the beginning to inform advisory committees that they have a limited role. They are not steering committees and do not have the responsibility for actually planning the details of the curricula. On the other hand, they are not merely public relations devices. It might even be advisable to change the name of advisory committees to consulting committees to get their role in proper perspective.

The community colleges have an open door approach and yet when students arrive they find all sorts of impediments in the way of the open door. For one thing, programs are not available for a great many students. Still another, many teachers are not prepared to handle the students with the variety of backgrounds. The need for instructors to be occupationally competent presents a recurrent problem. Teaching personnel competent to convey the specifics of an occupation can often obtain higher salaries working in the occupation than in teaching. How are teaching personnel to keep themselves informed of ongoing changes in their respective fields?

The importance of in-service programs for teachers who are already on the job was stressed as well as the need for teacher preparation programs that would prepare teachers of technical subjects in the community college. One suggestion for keeping teachers up to date is that exchange programs be established with industry where industry would send a man to teach for a year while the teacher whose place he takes goes to work in industry.

Various suggestions have been made for the improvement of leadership in occupational education. Some have pointed to the need to keep alert for potential leaders in teaching staffs who can be developed. Others have called for a greater awareness of technical education in all undergraduate and graduate programs for teachers and educational administrators. Whatever else is needed will have to await a full identification of the problem and its exploration by the institutions of higher education and their teaching and research staffs.

At any rate, the overwhelming majority reacting to Harris's presentation felt that what was needed was a new look at curriculum development. We need creativity in the areas of curriculum development in order to devise programs to take care of the great variety of students coming to the community college.

Education should be taking the lead in planning and experimentation. We have the responsibility of training our students for tomorrow's jobs. We should have full time people star gazing, traveling, conferring, keeping up to date and trying to keep a step ahead of industry. We should have more programs similar to a program introduced by one of the newer junior colleges where they have budgeted some $75,000 this year to have fourteen instructors visit other colleges and industries across the nation, so that they may return home revitalized and ready to produce according to current needs and with the latest of ideas.

The community college clearly represents a response to the desire of the American people for more education for its citizens than that provided by the high school. Whatever the original intentions of those who established our junior colleges, they have now become the means of helping to lower social and economic barriers. The two-year institutions have become the great democratizers of higher education.

It is recognized that the objectives of junior colleges have changed over the years. We do not look upon junior colleges as institutions whose primary function is to feed universities. A changing society, a changing industrial order, and a changing population necessitated new objectives for junior colleges. With these new objectives came new curricula. With the recognition of the fact that junior colleges must offer opportunities to others than to those who expect to go to universities and professional schools, there has been a rapid development in semi-professional curricula.

Whether or not the junior colleges have made curricular changes adequate to meet the demands of a changing world is a problem that presents itself to everyone concerned with the junior college movement.

RECOMMENDATIONS

1. Institutions involved in the education of teachers and administrators have a great deal of work before them in the area of curriculum studies. In particular they need to carry on a continuing critical review of the relevance of what is being taught and how it is being taught, together with a search for what is not being taught that should be and an experimentation with new approaches. There is a need for explorations of the extent to which there are common foundations to various fields, which would permit programs to be offered in situations where enrollments in particular fields are inadequate. There is much room for curriculum experimentation with varying proportions of theoretical and applied knowledge in different fields. Finally, experimentation is needed in the development of curricula for persons with different backgrounds, ranging from programs for the hard-to-educate or -employ to those who have had varying types and degrees of employment experience.
2. The development of general programs in technology areas, perhaps designated as core programs, should be encouraged. These programs should expecially permit "sorting" of students. These programs should allow the students to explore a variety of areas, test their abilities, see if their perceptions of programs are accurate, before final decisions regarding programs are made. The development of pre-college summer sessions,

possibly involving field experiences, should be encouraged as another method of "sorting" the students.

3. The idea of the comprehensive community college is going to have to grow from a concept to a practical reality. College presidents, deans, boards of trustees, and more than a few parents will have to cease their efforts to convert the local community college into a prep school for the university, and start to organize and administer their institutions for the benefit of all youth.

4. Community college presidents will have to seek personal involvement in the occupational education program, and boast about it down at the Rotary Club luncheon just as enthusiastically as they brag about the transfer program.

5. Community college technical curricula must be planned at several levels of rigor, in order that students from a rather wide range of academic abilities may be served. Rigorous engineering technology programs yes, but also programs in other technologies, as well as curricula in business education, nursing, agriculture, home economics, and the service occupations.

6. Much more use should be made of lay advisory committees in planning and operating occupational education programs.

7. Attitudes of faculty members will have to undergo great change for the individual day-to-day involvement of the faculty in the total educational program of the college determines the success or failure of the enterprise.

8. The terminology of terminal education should be discouraged as much as possible and, in fact, students should be encouraged to accept the idea that all education is continuing. Students should understand that they are preparing for entry occupations and that the community colleges will always stand ready to assist them in developing their interests along cultural lines, general educational lines, and of course, job upgrading once they are employed.

9. Colleges should develop a formal for employment surveys and use college staff on summer study activities using the employment surveys. The information gathered will insure the kind of planning necessary for good occupational education programs and also provide employment for college faculty.

10. Regional planning rather than mere local planning should be encouraged. A central agency such as the American Association of Junior Colleges should develop realistic guidelines for determining time and resource needs necessary for proper curriculum planning and development.

11. Administrators should do more in providing materials and aids for teachers of technical subjects.

RESEARCH PROPOSALS

1. Considerable research related to guidance and counseling seems necessary. We know too little about how young people develop interests in the occupations at less than the professional level. Studies showing the ways in which aptitudes and capacities develop and differ at various age levels--in late puberty, adolescence, and early maturity--might

provide better guides to how general or highly differentiated various curricula should be. There is need for research into the ways of better coordinating guidance with respect to general and occupational program choices and with respect to later educational and occupational options and needs.

2. Controlled studies are needed of the extent to which work-study and other approaches might in fact be useful in the developmental experiences of different groups of students, including the able, the average, and the hard-to-educate.
3. On-the-job training needs to be studied with a view to its implications for occupational education programs, both in terms of methods and in terms of better dovetailing of the training and educational programs.
4. Careful longitudinal studies are needed involving the selection, development and occupational experience of different groups of students in occupational education and other programs.
5. The problem of what the job demands are for various technician jobs, needs careful research and continuing investigation. What needs researching are the actual job demands, not what some personnel manager says they are.
6. Research in the problem of status for technical education.
7. Research to untangle the different requirements for technical education instructors as opposed to trade and industrial teachers.
8. A research project which would look into the merits of a general education core which would be offered in a preliminary program for all

occupational curricula prior to a final decision on the part of students as to which occupational program they would pursue.

9. Some professional organization should do a study of how many graduates from technical programs are working in the same field two to three years after employment.

10. Research the question of "what is a good general education program for a technical student?"

11. Studies on the problems of curriculum development in the rural or small junior colleges and the implications for area vocational school approval under the federal vocational act.

12. What technical experiences, content or course work should be recommended for liberal arts majors seeking the Associate in Arts degree?

STUDENT PERSONNEL SERVICES FOR TECHNICAL EDUCATION

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This paper completes the design of a quadrantal view of technical education in the community college. The three other sides, society, administration, and curriculum, have stressed the external forces which impinge upon students. This paper will concentrate primarily upon the student and his internal needs as he interacts with his environment.

Some Theoretical Considerations

The fundamental referent in most meaningful discussions of higher education is the student himself. All too often educators are prone to compartmentalize their thinking regarding subject matter, curriculum, guidance and other activities of higher education in such a way that there is no meaningful relationship to the needs of the individuals being served -- students. Admittedly, a discussion of specific problems in education must have certain limits, or one would become involved in a morass of variables which would be impossible to handle with any degree of effectiveness. However, a discussion of guidance or any other educational activity must have some functional relationship to the individuals being served. When such a relationship ceases to exist, the service may soon become limited in value to the college and its students.

A second primary factor which must always be kept in mind when discussing technical education is the changing occupational patterns in the United States. As occupational requirements change there must be intra-institutional adjustments reflecting a changing reality in the world of work. Witness the diminution of the importance of home economics as a subject matter field and as an area of interest to students. Keep in mind also the obsolete practices which are so unfortunately widespread in traditional vocational education on the secondary level. These areas earned their neglect and rejection by parents and students because they were unable or unwilling to adopt to changing conditions in society.

If we examine reality through the student's eyes, we can establish a base from which we can have a meaningful dialogue regarding the relevance and types of guidance services which are necessary if technical education is to take its rightful place as an accepted part of higher education.

What fundamental psychological needs does the student bring with him to the campus? During the years of adolescence from twelve to twenty, the individual is struggling to become emotionally independent of parents, teachers, and other authoritarian figures. His progress is littered with roadblocks, however, his responses are for the most part positive rather than negative. He is subjected to the longest period of economic and emotional dependence of any group in the world, being required to attend public schools until at least age sixteen. The social mores put strong pressure upon him to graduate from high school. The non-high school graduate is psychologically incomplete and to a large extent rejected by society. He remains economically dependent upon his family, either wholly or in part, during the years he is in school. His emotional responses are limited by tradition, and his range of choice of behavior and self-direction is narrowly defined by his family and by society in general.[1]

The student's life is further complicated by his need to shift his emotional relationships from a subordinate-superior context with his parents to peer equals with which his emotional relationships are mutual and not dependent. This change, which is essentially a healthy shift to an adult heterosexual adjustment, occurs in high school and during the early college years. This shift in relationships is an imperative aspect of adult maturity, and those students who are unable to readjust themselves to mutually interdependent emotional relationships with others are the maladjusted adults of tomorrow.

During this same period many students are torn by feelings of guilt and anxiety resulting from their changing emotional relationships with their parents. Not all are certain that this is a necessary and acceptable change in behavior and feelings, and in many cases their problems are complicated by their parents' difficulties in making their own personal adjustments to the aging process.

The second major psychological drive is the student's need to become economically independent. Such as transition is relatively easy in an agrarian society, but the gulf between immature dependence and real economic independence in our current society is substantially wider than in former years. Consider, for example, that our current institutional arrangements, both in education and in industry, exist in part to keep young people out of the labor market. There are legal restrictions on their participation in economic activities of a productive nature and, far more important, adult and peer group pressures which encourage them, in none too subtle a fashion, to continue formal education in their mature years.

Economic independence requires a substantial personal income. This is the result of the unprecedented increase in the material standard of living in United States since World War II. The fact that material possessions costing substantial amounts of money are important in American life, despite any protests on the part of religious and educational leaders, has not been lost upon our youth. They, too, have higher expectations in regard to the possession of automobiles, adequate housing, clothing, and expensive entertainment as a right rather than a privilege. Such expectations often run contrary to their long period of economic dependence in which others make decisions as to whether they may have such material possessions or access to expensive leisure-time activities.

A significant number of American college students are emotionally immature at the time they come to the campus. Many of them leave in the same way. Manifestations of their immaturity include the widespread lack of definitive educational and occupational objectives, and their continued dependence upon adults for personal decision making. The mature person is able to respond to an objective world, to analyze himself and his environment in a rational way, and to arrive at and accept the advantages and disadvantages of decisions made by himself. Such rationality is dependent upon a high level of personality integration. The immature person seeks advice and direction from others. He is unable to overcome his emotional dependence and continues to behave in response to unmet personality needs. He has not succeeded in making his world an orderly and predictable place, nor has he been successful in ordering his activities and his relationships with others on an adult level. Many such students over-react to their peer group, accepting without question others' perceptions of reality and thereby making decisions for themselves which to the impartial observer are obviously unrealistic and unsatisfactory.[2]

Unfortunately, American higher education has been so preoccupied with the training of subject matter oriented faculty personnel that it has paid too little attention to the education of teachers who are capable of understanding and dealing with students' personality needs. The development of programs for training guidance personnel has been a partial answer to this persistent problem. As we all know, despite our progress in this arena, much is left undone on campuses today.

Present Guidance Practices

There is no doubt that community colleges fulfill societal needs not met by other educational institutions, and one of the most important of these is counseling and guidance. It is well to keep in mind, however, that there are practical limitations as to the extent to which the community college can effectively meet the needs of all students. That is to say, we must always keep in mind that students will be with us a relatively short period of their total lives. If they make normal academic progress in our programs they will spend a total of 18 months on the campus. We should expect neither miracles as reflected in changes in attitudes, nor the overnight development of psychological maturity simply because these students are associated with a college campus for a semester, two semesters, or two academic years.

We should also bear in mind that the student brings with him to the campus his previous life experiences, which have shaped and molded his personality, developed or failed to develop his abilities, and have to a large extent determined the level and direction of his motivations. Remember, the family had him for eighteen years, the public schools had him for twelve years. The experiences and conditioning which he received during this formative period are probably deeper and more long lasting than any experience we can give him in a community college.

Until recently there was very little substantive information about guidance practices in community colleges. The study conducted by the National Committee for Appraisal and Development of Junior College Student Personnel Programs under the direction of Max R. Raines, provided information of inestimable value to all those concerned with the adequacy of guidance in two-year institutions.[3] The findings are particularly significant for technical education. Technical education is relatively new, has limited acceptance by educators and the lay public, and requires, above all else, a firm base in guidance services if it is to serve students adequately.

Raines concluded that currently guidance programs are far from being adequate for the task ahead. He concluded that three-fourths of the junior colleges studied have inadequate programs. Of the 21 basic functions he defined, he found that only 25 percent of the larger colleges were meeting their responsibilities in a satisfactory manner and that a like situation existed in smaller junior colleges. Five functions relating to the counseling of students were adequately provided in less than one-half of the colleges.

One of the most serious deficiencies was the lack of up-to-date and comprehensive career information. Raines goes on to say:

> "Almost none of the junior colleges were providing such information with any effectiveness. If any effort was made at all, it usually consisted of an outdated file of occupational information that was seldom used by counselors or students. Those colleges which have attempted to do more have found it difficult to identify suitable sources of information that can be used effectively in group guidance or individual counseling sessions."[4]

Other deficiencies identified in the report included a lack of adequate coordination, evaluation, and upgrading of guidance functions and the almost total lack of community guidance services. Trained leadership was found to be meager in 49 large colleges. Only 18 percent of the deans of students had doctorates in behavioral and social sciences. Forty percent of the programs were headed by individuals with less than a master's degree in behavioral sciences or personnel work. Raines was also critical of the level of staffing of guidance programs, estimating that there were 800 full-time trained counselors in 719 junior colleges, a ratio of 1,200 students to 1 counselor. In sum, his report is convincing evidence that most community colleges have not achieved desirable qualitative and quantitative levels of guidance services.

It may also be observed that community colleges have not escaped the dilemma of psychological and functional division into an "academic community" and a "guidance community." When one talks to college administrators he finds that in many cases there is less than complete unanimity as to the relative importance of the functions of the academic faculty and those performed by guidance personnel. The matter is complicated further by the schisms which exist between technical and semi-professional faculties and a majority of teachers of traditional liberal arts and sciences courses. This issue is of major importance to the successful implementation of guidance functions for the benefit of technical and semi-professional students. If the general image of guidance and technical education is to be improved with students, parents, the lay public, and the academic community, respect for this type of training in guidance must be developed within these groups.

An impediment to the acceptance of such innovations in higher education rests to a large extent in the academic "in" group, those who have the credentials of an academic discipline and are granted equal status by their faculty colleagues. This "in" group constitutes a powerful informal organization on many college campuses. Its influence can be seen in the development of educational policies, inimicable to the improvement of guidance services. All too often guidance personnel have reacted as an "out" group and have developed a competing hierarchy, having its own esoteric language and its particular status symbols.

Our first problem is the university preparation of professional personnel. The education of individuals who will eventually make up the professional core of community colleges must more nearly approximate the kinds of responsibilities which they must assume in this particular kind of institution. First, let us examine the teaching faculty. The primary emphasis upon the training of faculty is focused upon a subject discipline. This is all well and good, in that, we need teachers competent in the material they are to teach in the classroom. It should be noted, however, that most community colleges describe the role of the faculty as consisting of teaching, student advising and counseling, and committee work. Few graduate programs are specifically designed for the preparation of college teachers, and virtually none provide for an adequate grounding in the social and behavioral sciences. Thus, we find teachers joining college faculties with little or no understanding of the dynamics of human behavior and the relationships between educational and vocational choices and personality needs.

Second, as has been pointed out, Raines found serious deficiencies in the professional training of guidance personnel, as well as serious understaffing in most community college guidance departments. Preparation of active personnel in this field was deficient both qualitatively and quantitatively. There is a recognized body of theoretical and substantive material in the behavioral and social sciences which is applicable to professionalized student personnel work. As long as institutions lack well qualified personnel to discharge these responsibilities, there will be serious short-comings in our attempts to provide adequate guidance for technical students.

Last, administrators responsible for the overall development and direction of institutions must also have adequate knowledge and perceptions of the value of guidance services in the institutional setting. These individuals will be responsible for the distribution of college resources among various programs, and if they fail to understand the vital importance of counseling and related guidance services, there is little hope that the institution can develop a balanced program.

Implementation and Organization of Guidance Services

Dr. Richard C. Richardson, Jr., has developed a tri-level concept of guidance services. Such organization should do much to improve guidance services for technical students.

The first level of student service is that done by the teaching faculty members, and involves faculty advising and the sponsorship of student activities. Much, but certainly not all, faculty advising involves educational programming. As the staff members most closely in contact with individual students, the importance of a vigorous faculty advising system, as well as the significance of interested faculty sponsors, cannot be overemphasized.

The second level of student service is that provided by the professional counselor. Such counseling is likely to be more intensive and to involve a broader range of topics than that provided by the faculty adviser. Examples of second level services include problems of vocational choice, the reduction of emotional tensions resulting from personal problems, social information, psychological testing, and such other areas as may be considered appropriate.

The third level of student services is that provided by specialists in a number of areas who devote substantial portions of their time to the organization and supervision of such functions as placement and follow-up, financial aids, admissions and record-keeping, pyschological diagnosis and referral, and student activities. These services provide support to first and second level personnel, thus enabling them to spend a greater percentage of their time in direct contact with students.

Overlaying all three levels of student service must be a pervasive and well directed system of referral that ensures the movement of students to the appropriate individual who can best provide the services required. It is this system of referral that most frequently breaks down in the traditional organizational patterns for student services. The tri-level organizational pattern will do much to ensure an adequate and effective referral system in which students may take advantage of all available college resources.

Essential to this concept is assignment of professional counselors to the teaching division level as opposed to retaining them in a central pool. While this constitutes a novel approach to the use of such individuals, there is much to be said for it. The following benefits can result:

a. The counselor is housed where the students are and where they are accustomed to coming for assistance from faculty members. Consequently, the stigma frequently associated with visiting the "clinical" counseling center is dissapated.

b. The close interaction between counselors and instructors necessitated by the housing arrangements and frequent division contacts improves counselor-teacher interaction and leads to a process of mutual education whereby the teacher comes to know and respect the functions of the counselor while the counselor learns in depth the teaching mission and specialization of the division.

c. The process of referral between the three levels of student service is greatly facilitated since there are functional line and staff relationships between each level.

d. Central services of the student personnel staff has direct lines of communication with the teaching divisions by means of the division counselors who may be called in weekly for staff meetings and in-service training sessions.

e. The counselor being more directly on the firing line gains a more realistic concept of the function of counseling in the community college as opposed to the clinically oriented university counseling center approach.

f. Division teaching units and counseling staff economically and effectively may share clerical staff since the peak loads of one seldom correspond with the peak loads of the other.

The tri-level concept of guidance can be an effective instrumentality in the implementation of guidance personnel of a comprehensive community college as illustrated by Norman Harris.[5]

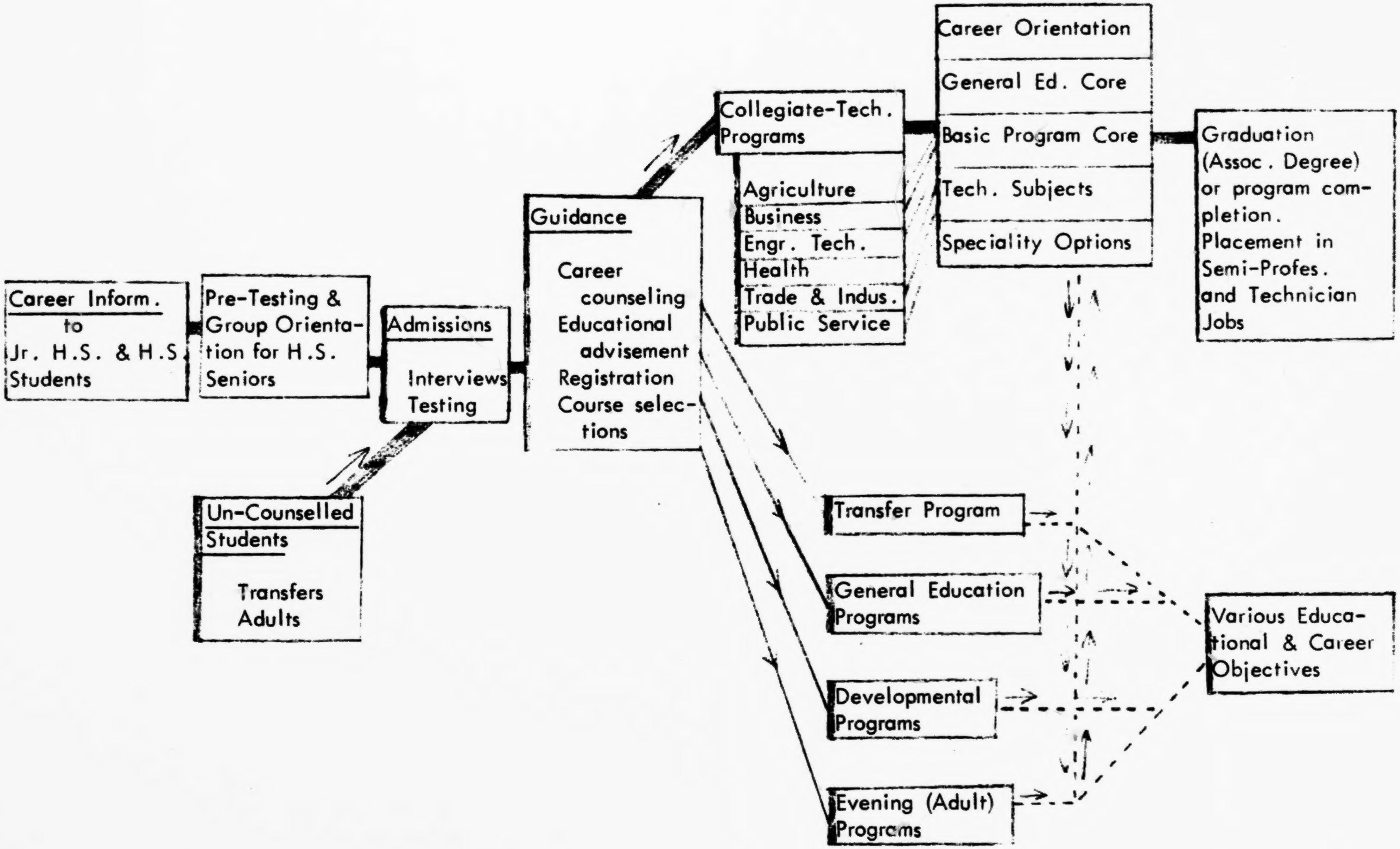
Educational Responsibilities of the Guidance Service

The student personnel department must have some formal educational responsibilities if it is to serve the needs of technical students, and if it is to become an integral part of the academic community. I am suggesting here that comprehensive community colleges need a vestibule program which can be made available to students wishing a college experience, but who are not qualified for admission to either technical or transfer programs as they currently exist. This vestibule program should be under the direction of the dean of students and should have as its objectives: 1) the development of skills in general education, 2) the communication of occupational information of specific import to students, and 3) introductory courses in which the student can sample one or more technical or semi-professional programs.

This concept is somewhat different than that undergirding most remedial or developmental programs now available in community colleges. It envisions the development of a teaching-counseling team consisting of appropriately trained faculty members and counselors. The student teacher ratio in the program should not exceed 20 to 1, and the ratio of counselors to students should

Flow Chart--Suggested Guidance Program

Comprehensive Community College


Career Inform.
to
Jr. H.S. & H.S.
Students
Pre-Testing & Group Orientation for H.S. Seniors
Admissions
Interviews
Testing
Un-Counselled Students
Transfers
Adults
Guidance
Career counseling
Educational advisement
Registration
Course selections
Collegiate-Tech. Programs
Agriculture
Business
Engr. Tech.
Health
Trade & Indus.
Public Service
Career Orientation
General Ed. Core
Basic Program Core
Tech. Subjects
Speciality Options
Graduation (Assoc. Degree) or program completion. Placement in Semi-Profes. and Technician Jobs
Transfer Program
General Education Programs
Developmental Programs
Evening (Adult) Programs
Various Educational & Career Objectives

not exceed 50 to 1. Such a program would make it possible for students to learn essential facts about occupations and their education requirements. It would give the faculty an opportunity to observe each student during a semester or a year, and at the end of this period determine whether or not he should be permitted to move into a technical or transfer class schedule. Students who could not successfully master the requirements of the program would still have had a meaningful collegiate experience and could be directed toward an occupation in the community, the demands of which they could meet without further education.

Recruitment of Students

Perhaps the most serious problem facing technical education today is the difficulty in recruiting qualified students in sufficient numbers to meet the demands of industry and to utilize expensive facilities at an appropriate level. Much of the emphasis of this volume has been upon the necessity of improving the public image of technical education. Frequently, a major share of the responsibility for the failure to do so is laid at the feet of guidance personnel. It may be important at this point to stress the limitations and the potential contributions of guidance services in this area.

The admissions service along with counseling personnel constitute the first external link with high school teaching and counseling personnel. As such, they must constantly appraise high school personnel of the technical programs in the college, the educational requirements for these programs, and the need for trained personnel in business and industry. At present, counseling staff members frequently lack the detailed knowledge of the technical programs they represent necessary for successful presentations. It's the old story of having to know the product you plan to sell. Further, the complete reliance on counseling personnel to do the selling at the high school level is unwise since counselors by their very orientation tend to present information without making recommendations. Consequently, their efforts at the secondary level may only reinforce existing biases. The assignment of a counselor as a member of the division team combined with the judicious use of teaching faculty members as back-up personnel for high school visitations should make recruitment at this level increasingly effective.

The development of effective communication from the college to the community with regard to technical programs will continue to be impeded by the lack of accurate and comprehensive career information. Raines has recommended that, "Adequate methods for the analysis, preparation, and distribution of career information must be established in conjunction with related agencies at the federal, state, and local level." It is apparent that individual community colleges have neither the staff nor the resources to maintain comprehensive libraries of career information. The cost of individual college programs of this sort would be prohibitive, in that, such information is rapidly outdated, it is difficult to secure, and it requires careful presentation before being made available to students. The primary responsibility for adequate occupational information should rest with state and federal governments. Such material might be developed by governmental agencies and deposited in regional centers, from which a large number of colleges could draw information as needed. Providing counseling personnel with comprehensive and up-to-date career information would make recruitment from the college vestibule program and from among those students who have unwisely elected the transfer program far more efficient than it is at present.

Of course, it must be emphasized that the absence of readily available career information at the present time is no excuse for guidance staffs to sit back and await the implementation of my recommendations at the state and federal level. Far better use can be made of existing information through seminars, career nights, and other devices designed to increase student awareness of the importance of occupational choice as well as the breadth of career opportunities. There are also many undeveloped sources of information within the community that could, if properly utilized, do much to improve the availability of recruiting information. Again, however, such information will never be properly utilized so long as guidance personnel are permitted to operate from a central pool where they are permitted to view themselves as primarily concerned with the resolution of personal problems.

Harris has set forth a most insightful analysis of the overall problem:

> "Recruitment is largely a matter of public information. Parents, students, high school and junior high school faculties, potential employers, and citizens in general must be made aware of the nation's need for middle manpower; of the growing status, attractive salaries, and excellent working conditions of jobs at the semi-professional level; of the programs and facilities available at the local college for occupational education; and of the significant occupational trends in the manpower structure which bode nothing but ill for the future for the uneducated and untrained. News releases, brochures, slide-filmtape programs, speakers, open houses, television programs, realistic pronouncements from business and industrial leaders--all these and more must be used, and they must be used continuously. Fletcher advertised Castoria for forty years before "babies cried for it," and we haven't really made that kind of effort yet."[7]

It is only fair to point out, however, that the kind of effort Harris calls for cannot be left to the sole responsibility of the guidance staff. It must be an institution-wide effort coordinated at the highest level and utilizing personnel within the college for those tasks that they are best suited to accomplish.

If technical and semi-professional training is to be understood by a broad segment of the population, it must have a much more thorough and extended interpretation through college staff members. The transfer program is well understood by a majority of the population. Technical and semi-professional occupations are new on the business and industrial scene. So, too, is the training for such occupations. Such interpretation must begin with facts about educational requirements, occupational opportunities, and the importance of such training to individuals and to society in general. Students require extensive help in understanding the importance of technical preparation, but in addition they need help in understanding the appropriateness of courses in social sciences and humanities to their total educational experience. Unfortunately, many technical students reject non-technical courses as extraneous to their needs. Little do they realize the necessity of having skills in written and spoken communication, and understanding of the social sciences and the fundamental grounding in mathematics and sciences as general education subjects.

The Placement Function

Next to recruitment and selection of students, the topic that is likely to be of greatest concern to technical educators is student placement. The faintest rumor that the graduates of a given technical program cannot be successfully placed in appropriate positions can cause the stoutest heart to quake. At the same time, increasing concern about recruiting practices with respect to two-year college graduates is evident. How can technical programs achieve the desired stature as long as employers do not recognize the need to improve the dignity of current practices wherein students may be subjected to pressures to leave school prior to completion of their program on the one hand or involved in a procedure that approximates the union hiring hall on the other?

The placement function should be carefully evaluated and reorganized so that it becomes an integral part of technical education programs and guidance services. The placement of technical personnel is as vital as the transfer of students from two-year to four-year colleges. It is an axiom that if graduates of these programs cannot be placed in jobs of higher status and pay than those secured by high school graduates, the entire program will suffer from the lack of community support and student interest. The placement of students in appropriate jobs and their consequent successful occupational adjustment is imperative if technical education is to serve a significant number of community college students. In this connection we cannot overlook the importance of technical and semi-professional training as it relates to the upgrading of job skills of adults. Placement activities can be important, both for the satisfactory adjustments of graduates in business and industry, and for the recruitment of new students.

The placement function should be a cooperative effort involving technical faculty and qualified guidance personnel. It should proceed simultaneously on a number of levels which include part-time work experience for students who must be partially self-supporting (non-cooperative programs), cooperative education programs in which there is a meaningful functional relationship between the work experience and classroom study, the placement of graduates in full-time employment, and the placement of adults who through education have acquired skills of a higher level. Placement officers can also perform a desirable service by encouraging employers to permit students to complete a comprehensive technical curriculum before they are offered full-time employment. One of the negative factors in the public image of technical programs is that too many students are only half trained before seeking employment. If the technical curriculum is educationally sound, the student should be expected to complete all the requirements before being classified as a competent specialist in the field.

Guidance and technical education personnel should make a concerted effort to develop and operate extensive cooperative work-learn programs for their students. Such arrangement would have many advantages:

1. Occupational information in relatively abstract form can never substitute for direct personal experience on the job. Students would have an opportunity to know first hand the kind of environment in which they would work after graduation.
2. Such personal experiences would establish the relevance of course work and other college requirements to the occupation.
3. The placement of college graduates in specific businesses and industries would be facilitated.
4. Employers could be convinced of the worth of community college technical training.

5. Such an arrangement would facilitate communications between the college faculty, guidance personnel, and industrial personnel.

The business community can be made aware of the importance of technical education through the placement service. Not only should they know of available trained manpower, but they should also be kept informed as to the specific kinds of occupational training and course patterns required of technical students. On-the-job success of technical program graduates will be the best advertising for the college and its specialized programs.

Conclusion

I have touched briefly upon some problems and some suggestions which hopefully would improve the effectiveness of student personnel services in relation to technical and semi-professional education. I would like to conclude my presentation with some specific recommendations which should lead to greater understanding of our problems and perhaps to some acceptable solutions. The implementation of these recommendations will depend upon federal and state governments, universities, community college trustees, administrators, faculty, and guidance workers, as well as the American Association of Junior Colleges. It is my very strong opinion that we can only find satisfactory solutions to our current dilemma if all of these agencies work together in such a way that each will contribute its particular resources in cooperation with the others.

It is recommended that:

1. A network of at least 25 to 30 major universities distributed geographically over the United States should be encouraged to develop training programs for new faculty personnel who will fill administrative, teaching and guidance position in public and private community colleges. In addition, these centers should

provide in-service training programs, as information centers and as producers of both theoretical and operational research.

2. The American Association of Junior Colleges should expand its role as the informal coordinating agency for inter-university and university-community college communications and cooperation. The Association should also continue its fine work of stimulating philanthropic foundation interest in community colleges.

3. Federal funds should be made available for fellowships for the training of at least 500 guidance specialists each year. Recipients of these grants should come from college and high school faculties and should complete at least 30 graduate hours in social and behavioral sciences and personnel work.

4. Universities should organize and conduct high quality in-service training programs for community college personnel, such programs to be carried on during each academic year. Community colleges should encourage faculty participation by making adjustments in personnel assignments and financial subsidation of tuition costs. The primary emphasis of such programs should be in social and behavioral sciences and, at least in some instances, in student personnel work.

5. Community colleges should immediately examine their administrative organization with a view to improving guidance functions. This analysis should include a realistic study of personnel needs, a definition of functions to be performed and internal reorganization of the institution to insure more effective service to students.

6. States having sparse as well as dense populations should assign to some community colleges specialized technical and semi-professional programs and provide student housing so that a relatively large geographic area could be served. Program costs, small numbers of students and lack of trained teachers in some technical specialties make it apparent that all colleges should not necessarily offer all technical programs.

7. A federal agency should develop and disseminate comprehensive occupational information to community colleges.

8. Admissions criteria having nationwide applicability to technical programs should be developed and made available to all community colleges.

9. High school counselors should be sufficiently involved with community colleges and their programs that they can help high school students

understand and take advantage of education opportunities in technical programs.

10. Criteria for the evaluation of student personnel programs should be developed and applied to such functions in community colleges in an attempt to improve service to students.

11. A number of community colleges should be selected as demonstration centers in which innovations in guidance and technical education could be tested.

References

1. Maslow, A.H., Motivation and Personality, New York: Harper and Brothers, 1954.

2. Sanford, Nevitt, Self and Society, New York: Atherton Press, 1966, p. 168.

3. Raines, Max R., Junior College Student Personnel Programs: Appraisal and Development, National Committee for Appraisal and Development of Junior College Student Personnel Programs, 1965.

4. Op. Cit. p. 21.

5. Harris, Norman, Flow Chart prepared for presentation at Technical Education Conference, Midwest Technical Education Center, St. Louis, Missouri, May, 1966.

6. Ibid.

7. Harris, Norman, Curriculum and Instruction in Technical Education, presentation for Technical Education Conference, Midwest Technical Education Center, St. Louis, Missouri, May, 1966.

REACTIONS, RECOMMENDATIONS AND RESEARCH PROPOSALS

for

STUDENT PERSONNEL SERVICES FOR TECHNICAL EDUCATION

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Concern about the difficulty of changing ways of doing things was expressed. There must be an emphasis on creating a climate which will encourage change, new ways of doing things, different approaches to meeting student personnel needs. The Vocational Education Act of 1963 provides the framework and foundation for creative responses to meeting the occupational needs of the nation, the states and the communities. Unfortunately a large number of persons in leadership positions at the Federal and state levels who rose to their positions because of long experience in vocational education seem unable or unwilling to give up methods and techniques forged in the past. As a result, many state plans for vocational education not only impede innovative practices, but prohibit them.

The decentralized counseling program, with the professional counselors assigned to teaching divisions, was generally regarded favorably by the delegates. Decentralization of counseling does not obviate the necessity of retaining a core of admission counselors to give general information and advice to incoming students concerning their likelihood of success in the several curriculums of the community college after a consideration of their preparation, their test scores and interests.

The present situation of an inadequate number of professionally trained student personnel workers seemed to dominate the discussion. As a result, the 50 to 1 ratio of counselors to students suggested by Dr. Blocker was generally considered impractical, even for a remedial or developmental program. One discussion group thought similar results might be obtained by use of group counseling sessions or exploratory courses. In addition to remedial instruction in reading, mathematics and other basic skills appropriate to the needs of the students, such sessions or formal courses could include occupational exploration and personal exploration, to include attitudes and values.

There was one report of an attempt to move up students who tested below the tenth percentile. Three hundred students were in the sample. They were distributed between a control and an experimental group. The control group after identification, was treated in the same way as the rest of the student body. The experimental group, all of whom had to be volunteers, was given special attention by the counseling and instructional personnel. The experiment lasted for one academic year. The results were disappointing. None of the three hundred students returned for a second year at the community college. The only difference between the experimental and control groups was the staying power of the former. The others dropped out of college early in the year. A tentative conclusion was that members of the experimental group, as a result of the special attention, came to a firm conclusion that they were unqualified for further college study. A limited follow-up study suggested that these low ability students were not prepared to accept their own weaknesses. They gave a variety of reasons for not returning for the second year of college. Almost all of them indicated that they had planned to return, but something came up which made it "impossible" for them to get exactly the right courses at the right time. Interestingly, almost without exception these were academic or college transfer courses, not the courses in occupational programs. Once they had got through the developmental year these low ability students apparently regarded occupational programs as inappropriate for them. They felt they had "beat the rap," had gone through purgatory, and no longer had to settle for non-transfer programs. This was true even though it would have been possible for many of the students to have achieved an associate degree after one more year of successful study in an occupational program, a possibility which did not exist in "transfer" programs. On the basis of this experience the counseling staff of the junior college involved in the experiment questioned whether a developmental program for low ability students really had the capabilities to move students up the educational ladder, in either occupational or transfer programs.

The discussion group, while not prepared to make a recommendation questioned the effectiveness of vestibule programs. True, this may be a way of providing a college experience for low ability students, as Dr. Blocker suggested, but the question whether taxpayers would long support a program which might salvage two or three of a hundred students at high cost with the recommended 20 to 1 student-teacher and 50 to 1 student-counselor ratios was subject to much discussion.

In summary, reactions to Dr. Blocker's presentation were favorable. Except for a general questioning of the relative merits of his proposed vestibule program, only a few cautions were suggested, one or two questions raised about the substance of his remarks.

Recommendations

In recognition of expressed concern about resistance to change, the delegates agreed on the importance of innovative and open-minded persons being selected for leadership positions in occupational education. The person responsible for directing the community college student personnel services program should be alert to signs that industry and education are continuing to team up to keep young people from obtaining actual work experience, substituting vicarious experiences for the real thing. This may appear at first glance to be a matter of concern to the student personnel worker who assists students struggling with problems of vocational choice.

The student personnel services staff can be involved in programs of in-service education for community college instructors. The majority of instructors need an introduction to the junior college student. This kind of introduction can be prepared and given by the student personnel services staff for new instructors. Refresher programs or information bulletins can be developed to keep the continuing faculty members up-to-date about the community college's students.

Care must be exercised that the student personnel services staff does not inadvertently perpetuate false stereotypes of the community college student. If the evidence of the college information bank indicates differences between the "transfer" and the "occupational-terminal" student, the differences should be made clear. So should the similarities.

Other ways in which the student personnel services staff can be of assistance to the instructors should be sought out, particularly those which relate to the world of work.

There should be a sharing of information about changing employment conditions among the counseling and teaching personnel. In some cases, the instructors of technical subjects will be more sensitive to the changes; in others, the counselors. In either situation, information of this kind should regularly be fed into the curriculum and the counseling program.

Informal exchanges lead to mutual respect. This should help break down the perception by teaching personnel that the counseling staff are not of the "in" group, a perception described by Dr. Blocker.

Another way of building mutual respect among teachers and counselors is to invite instructors of occupational courses to become counselors. This could be done in stages. First, they might serve on a college guidance committee. Next, they could be encouraged to begin professional preparation for counseling. This could begin with nomination to a summer National Defense Institute for Guidance Counselors to be followed by a regular appointment to the counseling staff. At first, counseling would be a part-time activity, along with continued classroom teaching. Hopefully, a number of the teacher-counselors would be motivated to continue preparation for full-time professional counseling.

Regional "Emphasis Technical Education" conferences can provide another kind of in-service education program. At these regional conferences a format like the one followed in the St. Louis conference could be used effectively. Participants should include instructors and student personnel services staff. Perhaps some administrators could be invited. The professional stimulation given by excellent speakers is important. So is the cross-fertilization that occurs in meetings among those who have similar responsibilities and activities. We may not like it, but it is a fact of life that an extremely small percentage of community college instructors and counselors gets to national professional meetings. It should be possible for them to participate in regional meetings modeled after this one. It may take more than this, but an experience like it should get them started out of the rut of habit and down the road of innovation.

There are other ways to integrate the counseling function, in addition to inviting instructors to become active counselors. The team approach might well be used. Counselors and faculty members could work cooperatively with students in several ways: Jointly, they can help the student identify a vocational goal that is meaningful and attainable. Together they can plan a program of studies leading toward that goal. Instructors can be available to the counselors and participate with them in counseling sessions when appropriate. Each, of course, must acknowledge his own limitations and be sensitive enough to realize when he should step out of the situation, and do it, making proper referrals to others.

Perhaps some cross-fertilization can begin among counselors. It should not be too difficult to set up counselor exchange programs among community colleges in different states, even widely separated states. This might be most feasible during summer terms. Members of small counseling staffs especially should have opportunities to exchange ideas and aims with people who are doing similar work in other parts of the country.

Perhaps a triad of institutions might be induced to cooperate in a somewhat different kind of exchange. A university's counselor preparation staff, a community college student personnel staff, and the personnel officials of an industrial establishment could be organized into three-man teams. At first they would have weekly get-acquainted meetings, probably over lunch, getting to know one another as individuals and as professional colleagues. Then they could bring from their various backgrounds the latest techniques, the newest ideas and concepts to share with one another. Hopefully, some of the ideas from the university would be helpful to the community college and to industry; similarly, some of the ideas from the community college should be helpful to industry and to the university; and, those from industry to the university and the community college. There is no obstacle which should prove insurmountable to keeping the three from moving on to the next logical stage in their relationship: exchanging jobs for short periods. In this way they each would become more intimately aware of the others' needs than by hearing about them.

Perhaps, after a number of these triads have been in operation, they can be brought together with some of the very bright people in "think centers" throughout the country. In concert they might decide on ways in which newer theories and techniques may be tested, ways which would be more solidly based on reality than much current research.

There was general agreement that articulation with secondary school guidance programs was important. There is a critical need for high school counselor pre-service and in-service training which includes an introduction to the community college and occupational experience. Given the present counselor preparation program, it should be no surprise that high school teachers and counselors tend to encourage students to seek careers which require a bachelor's or higher degree.

It is recommended that the student personnel staff of community colleges establish or reinforce lines of communication between the community colleges and the high schools. Community college staff members should make themselves available to assist high schools to conduct more comprehensive follow-up studies of their graduates. At the present time the preponderance of these studies deals with the number and success of graduates who go to college. More are needed on those who do not go to college. Careful analysis of the results of such studies should indicate areas which need more emphasis in the high school guidance program. They should also indicate areas in which the high school counselors need further training. It is expected that needs for technical programs in the community colleges will become evident. This being the case, the community college student personnel workers should be able to assist the high school guidance counselors in several ways.

They can identify students who should be capable of succeeding in technical curricula of the community college. They can assist curriculum planners in the development of high school courses and programs which will more effectively prepare potential community college occupational students than do the present academic or vocational tracks. It should be obvious, but is mentioned for emphasis, that this kind of community college-high school cooperation hinges on the ability and determination of the community college student personnel worker to make the necessary moves. The first one should be the move away from his desk and over to the high school guidance offices.

Together, the high school guidance counselors and the community college student personnel workers can provide the stimulus to change counselor preparation programs of the universities. Occupational trends and needs, often omitted from such programs, can be brought into them effectively.

It was recommended that preparation for counseling-teaching activities be included in community college teacher preparation programs. Teacher training programs of colleges and universities almost completely overlook the kinds of skills and understandings that a prospective teacher needs to develop in order to play the role of a teacher-counselor.

In addition to such regional or area approaches to improving high school-community college-university articulation, a national program is recommended. The American Association of Junior Colleges is encouraged to develop a comprehensive program to advise counselor organizations and training centers of the needs and requirements of counseling in community colleges.

Greater liaison between counselor training programs and other departments and divisions in the four-year institutions should be encouraged in releases from the national offices of AAJC. Universities and training centers which recognize the unique requirements for programs designed to prepare community college counselors, especially in the occupational areas, should be "rewarded" through the availability of funds for scholarships, fellowships, research and development programs, and in other ways. This would be a wise investment of funds in proven places and it would likely stimulate a wider degree of interest in such programs at other institutions.

Several recommendations pertained to ways in which attitudes might be modified.

Technical education should be given equal billing in community college newspapers, in the yearbook, in catalogs and brochures describing the college and in news releases.

Take advantage of every opportunity to contact parents. Invite them to accompany students at admissions interview or special counseling sessions. Frequently such contact will persuade parents that the student should revise his vocational (and educational) goals. They may come to accept the idea that enrollment in an occupational curriculum is not resignation to failure but can well prove to be a great opportunity for the student. Every possible news media, speaking opportunities, mailing lists and other opportunities should be used to get information directly into the home.

It is proposed, further, that emphasis in the community college and in the high school counseling for community college should be on the completion of the associate degree, rather than on a transfer or occupational program. This would be similar to the counseling offered toward admission to four-year colleges where the emphasis is on the bachelor's degree rather than upon programs leading to jobs as opposed to programs leading to master's and doctor's degrees.

Certificate programs have not been adequately discussed in terms of appropriate student personnel services. Perhaps the reason is tied to the fact that certificate programs are primarily designed to serve adults or the older out-of-school youth. Community colleges with experience in certificate programs serving the out-of-school youth and adults have found that these people, too, need student personnel services. There is a clear need to identify the relative importance of the student personnel services needed by this group among the variety of services available.

There should be a roundup of the experiences of community colleges which have already tackled the key student personnel problems with success. These can be published and distributed among the membership of the AAJC, possibly free on return of a postal card. In addition, stocks should be maintained for sale to the general public. Information should also be assembled and distributed on attempts to do remedial work.

Research Proposals

Develop specific criteria for admission to technical and transfer curricula and evaluate these criteria for effectiveness and accuracy in a careful longitudinal study extending over, perhaps, ten years.

Measure the effectiveness of vestibule courses, exploratory courses or extended group counseling in improving the selection of appropriate curricula by the undecided or unprepared student. Retention and success in the curriculum selected can be used for evidence.

Develop a study of undecided or uncommitted applicants for admission to community colleges. Have a two-faceted orientation course as part of the program for the experimental group. Part of it would be oriented towards transfer programs and would include visits to the campuses of four-year colleges in fact or by moving pictures or other devices, possibly bringing students, counselors, housing and financial aids officials from them to the community college orientation classes for discussions. The other facet of the orientation program--and, it is emphasized, both would be included for all students in the experimental program--would be pointed towards several of the technical occupations to include visits to appropriate business establishments and laboratories as well as the bringing of technicians, their supervisors, and personnel officers into the community college orientation classes for discussions with students.

Involve sociologists, psychologists, psychometricians, and others in developing an instrument which can be used to gain more information on the lower ability students who do not now succeed (and those who do, to be sure). Testing and measurement are already being used in these programs, but it is strongly believed that tests which are appropriate for the "average" student are inappropriate for the low ability student. New ones are needed.

The Midwest Technical Education Center should be able to fund a proposal to investigate the acceptance or lack of acceptance by counselors of basing counselors in academic divisions.

An attitudes survey should be developed to determine what various segments of society think about occupational education. Then this could be synthesized and made available to student personnel workers to help them understand how they might best work with students considering technical education programs.

Components of counselor training programs should be evaluated, examined, and generally based upon studies of job requirements rather than being based entirely upon psychological theories. Studies to maximize the congruance between community college counselor job skills and activities and counselor training programs should be conducted.

Criteria by which student personnel programs are judged, particularly counseling and occupational guidance, should be more rigurously developed. This would make the evaluation of such programs more effective and allow research in these areas to be more rigorous and defensible.

Study the use and application of new techniques and tools, such as information processing and retrieval systems, remote consoles, and display devices connected to central data banks. Such tools should permit counselors to devote more time to counseling and less to record keeping, folder maintenance and paper shuffling. They should also make it possible to gather, maintain and apply to student problems a wider variety and more accurate type of information.

Study the value of different occupational orientation programs and patterns.

Study effective ways to develop a program for transition from the casual to the central system of placement service.

Establish pilot or demonstration centers in community colleges which can assist high school counselors through institutes, seminars, and work-study programs to understand more fully the role of the community colleges, the opportunities available to high school youth through the colleges, and to understand and become more experienced in the occupational opportunities and needs of business and industry.

TECHNICAL EDUCATION

and

THE U. S. OFFICE OF EDUCATION:

CONFERENCE IMPLICATIONS

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It is evident from the many excellent comments made during these last two days that we stand poised to unleash the largest remaining untapped natural resource--human potential. A number of the speakers have observed that there is a new relationship emerging between man, education, and work. In earlier days, 5 percent of the work force dealt with ideas and the other 95 percent did the hard work. Today, more than half the labor force work at jobs whose intellectual content requires some specialized or advanced level of education. As greater economic resources become available, those from deprived backgrounds will no longer be relegated to unskilled jobs. Self-realization and economic rewards will be distributed among a broad cross-section of the population. The prospect of better jobs for a large segment of the working population is within our grasp. Funds are starting to flow, both from the foundations and from the Federal Government, to support equal educational opportunities. Now we must develop the wit, trample the opposition, erect the needed structures, plan the curriculum, recruit and train the teachers, and open up our doors. Most of my attention today will be devoted to how we can operationalize and bring to bear the resources available to accomplish these ends.

Ed Gleazer has already dramatized the low prestige value of technical education. He catalogued quite well the popular view that a college degree is the thing to shoot for. This was dramatized to me not too long ago when I conducted a study of journeyman electricians who were in need of being updated in their field. The problem was how to get them enrolled in an adult education program and how to keep them there long enough to benefit from the training. In the process of trying to determine what would be an appropriate way of recruiting these experienced journeymen, I conducted a survey and asked them a number of questions about their plans for themselves and for their children. It was interesting to me that about 95 percent of these journeymen indicated that they wanted their children to go on to get engineering degrees or higher. They were not interested in urging their offspring to follow in their own footsteps.

It is also true that children from deprived backgrounds are not responding to the doors that are open to them at the sub-professional or technician level. Even deprived youngsters perceive the status of the sub-professional or the technician as being below the acceptable level. The U. S. Office of Education, as Dr. Gleazer argues, doesn't even maintain statistics on those enrolled in occupational education. I hope we can do something about it.

Norm Harris pointed out that the student who is enrolled in an occupational training program is perceived as below the level of the college transfer student. The Advertising Council of America has a long-term campaign to motivate people to give to the college of their choice. No reference is made to the fact that many of our high school graduates could obtain satisfying and rewarding occupations through working towards an associate degree.

The old question of how we might increase the prestige of occupational education has also been a point of discussion during this conference. I agree that better public relations programs have a part to play. I also agree that the foundations and the Federal Government should invest monies in technical education. It is true that Federal funds are becoming available. You've seen this recently in the press. $11.4 billion are being authorized by Congress during the next four years in support of education. In my program alone we are going to spend over $45 million in the next two years in support of occupational research programs. We are authorized to spend money not only in support of basic research but for demonstration and pilot programs as well as inservice training for teachers.

Admitting that appropriations and public relations are one way to reshape societal views, I'd still like to argue that the real way to change our image will be to make technical education responsive to societal demands.

Here are some of the questions that I think technical education ought to address itself to. Are we meeting our current manpower requirements and will we be able to meet the new demands five years from now? As automation progresses, how many current technical occupations will be eliminated? What types and numbers of personnel should we be training for emerging technology such as health services, numerical control of machines, cyrogenics, automated typesetting, microinstrumentation, and laser technology? These are but a few of the programs that are beginning to open up that should have an impact on already existing programs in technician education. Another question might be, "How can we insure that we have adequate buildings and up-to-the-minute equipment and ample facilities?" To what extent can technician education benefit from computer assisted instruction, large classes, seminar groupings, and special instructional aids? How feasible is it to rent or contract for building space or use laboratory equipment and personnel available in nearby companies?

As the training of engineers moves onto more theoretical and scientific ground, what effects will this have on the type of training needed for the supporting technician? What of the implications of research and development programs as practiced by industry and Government and how can these be reflected in technical education curriculums? What can be done to insure that the knowledge and competence of the instructional staff keeps pace with new technological developments? How can existing staff best be retrained as teachers of new occupational skills?

What's the appropriate way to structure and exploit advisory committees? A good deal of Parker Wilber's paper addressed itself to this question. Is a local advisory committee adequate for our present day need? Or has the time arrived when the community which supports a given technical education program might also serve the whole State or metropolitan region or even the Nation? What implications would this hold for the establishment and use of advisory committees?

My last question, and one I would like to dwell upon at length is, "What's happening to our students?" Wilber suggested that we should conduct more follow-up surveys as a means for evaluating the adequacy of the training and education available in our community colleges. He suggests that we should be more customer conscious; we should follow-up on the dropouts as well as the graduates, to provide a means of evaluating teaching methods, curriculum content, the adequacy of teacher/student relations and our counseling practices. Current follow-up efforts conducted by a number of junior colleges have established that what may appear to be a high dropout rate is misleading in that many who leave for economic reasons re-enter the educational system either as full-time day students or as evening students later on. Others who drop out because of their inability to carry the workload argue that they might have stayed in had there been some flexibility in pacing the course to the background and learning ability of such students. More individualized attention would have also been helpful. These types of follow-up studies carried out by the local institution can be supported through grants from the Office of Education if they serve to demonstrate innovative or promising approaches which may have application in institutions elsewhere.

Clyde Blocker stated in his paper that we should expose many more of our faculty to the insights and methods of the behavioral scientists. By refocusing the attention of the teacher on the needs and reactions of his students to a particular curriculum sequence, we should begin to bring about significant changes in the way that he instructs his classrooms and prepares his instructional materials. Programmed instructional techniques which require careful checking against students' responses and performances offer just one of several promising methods for better adapting instructional practices to the needs of individual students.

Since the inception of the research and demonstration program in support of vocational and technical education in the U. S. Office of Education a year and a half ago, we have invested over $26 million in resolving many of the key problems currently faced by vocational and technical educators. In the process, we have articulated seven priority areas, ranging from the need for program evaluation to a better understanding of student career choice processes. Today I would like to spend the remainder of my time describing one such priority which is giving birth to a major effort during the next five years involving perhaps as much as $25 million.

Before I outline the nature and scope of that effort, let me describe how you might go about tapping some of these research monies that I have mentioned. There are three categories for research and development expenditures authorized by the Vocational Education Act of 1963. The first of these, research, is a hard term to define. Generally, we mean the type of study that requires an experimental base, that offers some opportunity for objective assessment in terms of the expected outcome. Many such studies can be described as basic research conducted by behavioral scientists. We have also supported a number of projects which can be described as demonstration or pilot programs. We felt that during the first couple years of our activity that we ought to reach out to identify those innovative programs at the local level that have succeeded in reshaping many of the vocational education practices that existed in this country for a good number of years. Such efforts simply need someone to come in, conduct a thorough-going evaluation, assess what really is happening, and then, if found to be successful, communicate the findings to other institutions around the country. In this category, then, of the pilot or demonstration project, we are quite interested in receiving proposals that describe an on-going effort in such a manner that we can assess it's probable impact and potentialities. Proposals of this type require a description of the evaluative procedure to be employed and a description of the manner in which the dissemination of results will be carried out.

The third category that our legislation authorizes is training. We've interpreted this as offering support for in-service training programs, summer institutes, and workshops. We pay for the transportation and per diem expenses and incidental fees for teachers in attendance. Most programs are from four to eight weeks in duration. Incidentally, we are currently planning what in-service training programs we'd like to support during the summer of 1967. If you're interested in participating, drop me a line.

These are the three categories of support which we offer. Over 1,000 proposals have been reviewed and there are now some 300 studies underway.

Returning to one of our major research investments this coming year, I would like to describe the criteria that we are using in establishing how we should approach the problem of curriculum development. The ultimate measure of success in vocational education will be what is taught in the classroom. How well it is geared to today's jobs and today's intellectual demands should be emphasized. However, to emphasize preparation for the entry-level occupations alone would be a mistake. It is a well documented fact that most sub-professionals in industry today will change their careers several times; thus, one of our responsibilities as educators is to provide students with a broad base of learning skills and attitudes which will carry them through a lifetime of work.

It is not enough to provide the student with specialized vocational training or academic preparation. He needs to know something about the world of work and what makes it function. Students should be allowed to sample a range of job opportunities before they become committed to a particular career area. Trying to avoid premature commitments to a given career can be aided by the way in which vocational education is structured at the various grade levels. Thus, we are interested in exposing students to a variety of occupational skills which may cluster around a related set of jobs.

This recital of the problems and shortcomings associated with what passes today as vocational education establishes the need for a major attack on the curriculum in this field. As new instructional techniques are developed and pilot curriculum efforts employed, several needed areas of emphasis have begun to emerge which support the need for fostering a major curriculum revision effort. It is this specification of the criteria for structuring a massive attack on vocational education which serves as the primary focus of the remainder of my comments.

A number of curriculum development efforts are now underway. I will attempt to group these in the following manner. The first group emphasizes the need for articulation between the academic and vocational curricula for the purposes of relating cognitive and manipulative skills. This is a very easy thing to say, yet very difficult to accomplish. One effort is bringing together a team of teachers to structure a new kind of curriculum so that math, science, and English components are interwoven with the specialized preparation for electronic technician occupations.

The second area of emphasis involves the recognition that other learning abilities, such as spatial manipulation and mathematical reasoning, should be tapped as well as verbal reasoning skill.

A third grouping stresses the development of occupational clusters so that the student can be cross-trained in a number of related occupational areas. The concept being emphasized here is that when a man finishes his training, he can be retrained in a related area more readily so that if he finds that his first occupational area is being phased out, he can transfer to another area with a minimum amount of training.

Fourth, two studies are focusing on structuring and understanding our economic institutions which underly the free enterprise system in this country. Let me illustrate this by describing a study that's going on at Ohio State. They've developed a model of our economic institutions in an attempt to structure a program at the junior high school level which will allow or permit the student to gain some insight as to how raw material is taken from its natural state and processed through to the point of sale and consumption. Someone stated earlier that we have to educate youth to make them adaptable to changing job demands. This type of curriculum gives special emphasis to this point.

It's important to recognize that most employers still require competence in some skill before accepting a new applicant. This is particularly true of minority group members who in the past have had to have excellent credentials to qualify or to compete successfully for job openings. Anticipating this kind of continuing need for specialized training for entry-level jobs, the Office of Education, the Department of Labor, and the American Association of Junior Colleges have identified job clusters which promise a rapid growth in employment opportunities in the future. We have selected some seven or eight emerging areas to concentrate on. Let me cite some of these for you: health services, landscape gardening, public and social welfare, office occupations and engineering-technician occupations. A number of these development efforts call for work-study arrangements. I thought this was an excellent point that Ed Gleazer made in his paper, that we should expand the student's opportunity to gain on-the-job experience geared to the educational program he is following in school. We now have at the present time some forty research and development efforts focused on curriculum development in this last group. I'd like to cite three or four of these studies.

The first is being carried out by the American Institutes of Research at Quincy, Massachusetts, where they're combining their effort with that of the local school district in a project known as ABLE to develop training around a family of occupations. The occupational preparation program as they envision it would prepare students to enter a number of jobs in a group of related occupations. They range from the electro-electronics field, to metal and machining processes, to power mechanics, to computer data processing, to food preparation, and to health occupations. The study is being planned over a 5-year period with a thorough-going evaluation at the end resulting in an excellent set of curriculum materials for dissemination to other institutions.

Other projects which seek to develop the job cluster concept are being carried out at the University of Maryland, the State Department of Education in Oregon, and Colorado State University. If you are interested in having details on who you might contact to get information on this, I'd be very happy to send such information to you.

We have several additional curriculum studies which attempt to combine vocational training with general education. Stout State University is involved in reshaping the industrial arts program to provide a better orientation to the world of work.

Information dealing with such basic topics as production processes, management responsibilities, research, and financing will be incorporated into a course known as American Industry. Other projects related to major curricula revision efforts are now underway in such traditional areas as vocational agriculture, home economics, and distributive education. Several of these projects are establishing training programs for agri-business occupations, food service occupations, child care and other gainful employment opportunities related to home economics and agriculture.

In addition to supporting curriculum revision and developmental efforts, we have sponsored conferences and special study groups bringing together outstanding leaders in the curriculum field to address themselves to the overall problem of vocational education curriculum development.

Some of you have read or heard of the study at MIT which we supported last summer. It consisted of a summer workshop over a 6-week period involving some 60 experts, not only from vocational-technical education, but from other disciplines such as physics, engineering, math, etc. The group sought to answer the basic question on what patterns of education will best prepare our youth for useful, satisfying, and gainful employment following termination of their formal schooling. In brief, they recommended that we seek to tap the total capacity of the student, including his intellectual, his manipulative, his creative, and his social capacity. They emphasized the principle of discovering abstract concepts through the examination of real world events. They recommend beginning at the lower grade levels to expose students to what's going on in our technological society. Recognizing that youngsters in the urban environment interact with a man-made world, they should understand a good deal more about how these objects and events are created.

Occupational based learning, says the MIT report, should provide an underpinning for the more traditional academic subject areas, such as math, science, and English. Shop and laboratory experiences will serve to counterbalance the present heavy emphasis on verbal reasoning. Communication skills, social skills, and work attitudes will be explored as appropriate to adapting students to their working environment. In effect, they're saying we should be concerned with all education and recognize vocational and technical education as an integral part.

At this juncture in our program, the question might well be raised, "How can the junior college movement help us in this pioneering effort?" I see it as a matter of helping you to establish yourselves as a third power center in education. One that fits logically between the public schools at the elementary and secondary level and the higher education but has a separate and distinct responsibility, that of technical, occupational, and continuing education for two-thirds of our population.

If we succeed in investing the necessary funds and really launch a well articulated program, I think we will achieve our goal of a major change, not only in vocational-technical education, but in the general and academic curriculum as well.

I would like to go on and describe some of the other exciting developments that have resulted from our recent investments in vocational and technical education research, but not enough time remains. Let me, therefore, close on the note that you should view the community college as the all-important link between students who graduate from high school and the working world. This is not your only responsibility, of course, and it makes good sense that we should help you to continue their education in order to improve their career opportunities. Many of these adults will have responsibilities, both personal and job-related, which prohibit them from full-time enrollment. The U. S. Office of Education is ready to begin a more aggressive program in helping you to plan appropriate programs and develop sources of funds to support continuing education activities within the local community. Insofar as our research and development monies can be of some help in planning such programs and training the necessary personnel, we stand ready to be of service to you.

THE MIDWEST TECHNICAL EDUCATION CENTER (MTEC)

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The concept of the Midwest Technical Education Center is a comprehensive expression of a complex set of ideas that have been nurtured and developed over a period of several years. Once such ideas reach the stage of being included in a comprehensive whole, then it usually becomes very difficult to determine the origin of the individual parts that make up that whole. This is, perhaps, as it should be since we are much more concerned with the potential output resulting from the pooled knowledge than with the input. However, in order to put the present state of the Midwest Technical Education Center into the proper perspective, it seems desirable that we make an effort to determine, at least in a cursory manner, its origin and subsequent development.

The preliminary sessions where the technical education center was discussed took place about two years ago in New York City and Washington, D.C., and included representatives of the American Association of Junior Colleges, the Carnegie Corporation, The Junior College District of St. Louis - St. Louis County, and several other institutions. The expressed interest and desire to initiate some positive action toward the solution of problems facing occupational education, led to several follow-up meetings during the summer and fall of 1964 at St. Louis. These meetings were attended by representatives of several local universities, in addition to the staff members of the American Association of Junior Colleges, the Carnegie Corporation, and the Junior College District.

The earliest concept of the center focused on the preparation of administrative leadership for occupational programs in comprehensive community colleges. As the discussions progressed, this rather limited scope of anticipated activities of a technical education center was expanded to include such things as: degree programs for teachers and counselors; institutes, workshops, and seminars for many publics interested in vocational technical education; consulting services; and research projects related to the education of technicians. As a direct result of these meetings and the associated discussions, a rather nebulous proposal was proposed by the staff of The Junior College District and was submitted to the Carnegie Corporation in February of 1965. This proposal was approved by the officials of the Carnegie Corporation and an award of $115,000 was made to The Junior College District and three cooperating universities to allow them to further investigate the feasibility of the establishment and maintenance of a Midwest Technical Education Center (MTEC).

The activities of the participating institutions during the first year of funding of the MTEC were to be concentrated on the development of more precise purposes and objectives, and on the establishment of pilot programs and projects which were designed to meet these stated objectives. The recipients of this first grant included the University of Missouri, a state university; St. Louis University, a private church related institution; Washington University, a private non-sectarian university; and The Junior College District of St. Louis - St. Louis County, a public comprehensive community junior college.

The allocation of the available monies among these institutions and their major area of interest in the development of resources for vocational technical education are outlined below.

The University of Missouri received $21,500 to investigate and implement, if possible, doctoral, post-master's and master's degree programs for the preparation of administrators in technical education. Washington University received $21,500 to develop a broad program of research related to business and industrial needs and to student reactions, interest, abilities and attitudes as related to technical curricula. St. Louis University was awarded $12,000 to institute programs for the preparation of counselors for community college work and for the education of elementary and secondary school counselors in the areas of technical and vocational education.

Although Southern Illinois University did not receive a part of this initial grant, strong commitments have been made by officials of the University to participate in a program for the development of teachers in technical education. The Junior College District of St. Louis - St. Louis County was allotted the remainder of $60,000 to organize and administer the overall efforts as well as to implement promotional projects and serve as a laboratory for the programs and projects being implemented by the participating institutions.

An Executive Committee composed of one representative of each of the four universities mentioned above, plus an equal number of members from the JCD, was established as the policy making body for the MTEC. The members of this group, as mentioned earlier, were to concern themselves with the finalization of the overall purposes and objectives of the Center as well as with the establishment of pilot programs and projects. With the assistance of the professional staff of the Center, and well-qualified consultants, the following statements of purposes and objectives have been developed and accepted by the Executive Committee.

The general purpose of the Midwest Technical Education Center is to provide a means for helping to overcome the future as well as the current shortages of well-prepared technical personnel for business, industry and the professions. It should be emphasized that the terminology "vocational-technical" as used here includes occupationally oriented programs of differing levels and durations that are not designed to lead to a baccalaureate or higher degree. Further, these programs would normally be offered at post-high school institutions such as comprehensive community junior colleges, technical institutes and other similar institutions. This terminology is also used in its comprehensive sense to include the different career groups such as agriculture, business, engineering and industrial, health, public service and other occupationally related areas.

The specific objectives to be met are:

A. to encourage the development of vocational-technical education programs in comprehensive community junior colleges, technical institutes and other similar institutions.

B. to develop the necessary and desirable material and human resources to adequately meet the needs for the improvement of existing occupationally oriented educational programs as well as for the establishment of new ones.

C. to provide a materials resources center to serve as a depository and readily available source of information and materials relating to the promotion and development of these career programs.

D. to conduct the research necessary to support the activities related to the general purpose of the Center, including the evaluation of effectiveness of past, present and proposed attempts to fulfill the needs for technical personnel.

In arriving at the rather specific objectives stated above, it was necessary to re-assess several related problem areas, including the needs; for technicians, for programs to educate them, for adequate resources to support these educational programs, for instructional materials relating to these occupational programs, and for research related to technical careers. Furthermore, if the MTEC was to be established and maintained for the major purpose of fulfilling the above-mentioned needs, then activities and procedures had to be identified that would maximize the availability of educational opportunities in the various technical fields.

The rapidly increasing needs for well-prepared technicians for business, industry and the professions have repeatedly been documented locally as well as nationally. The mounting awareness of this problem by well-informed individuals throughout the country is exemplified by the attention that information concerning the need for technical personnel has been receiving. A number of articles devoted to this subject currently appearing in lay as well as professional publications, especially the professional journals, are reports of the results of research studies in this problem area. This increase in scholarly research devoted to technical education is especially encouraging.

As the need for technicians becomes more and more apparent, attention is immediately directed to the sources for the preparation of these technicians. In the past, most of the programs devoted to this type of education have been carried on in technical institutes, two-year business colleges and similar institutions. It is becoming more obvious that the efforts of these institutions, although quite adequate in the past, are not sufficient to meet the current, as well as the greatly expanding future needs for well-prepared technicians. This of course necessitates the development of additional sources of vocational-technical education programs if the anticipated requirements for such personnel are to be met.

Many of the individuals most concerned with this problem are looking to the comprehensive community junior colleges as one of the most promising avenues for the development of the needed new programs. Not only is the commitment to vocational-technical education inherent in the comprehensive community junior college philosophy, but these institutions represent the most rapidly expanding sector of American education today as well as in the forseeable future. With the above in mind, it is becoming generally accepted that the major provision for the education of technicians will be through the expansion of existing and the establishment of new career programs in comprehensive community junior colleges.

If the development of these occupational programs is to occur, it will be necessary to stimulate the interest and awareness of the technical education needs at the local as well as national levels. There are several readily identifiable community groups that will require consideration if the desired results are to be accomplished. Persons directly associated with these two-year institutions including board members, advisory committee members and professional staff members must become sufficiently knowledgeable about vocational-technical education that they are able to convince the citizenry of their communities of the desirability of establishing such programs. Local business, industrial and professional organizations must continuously be provided with information pertaining to the existing and developing technical programs.

Another community group that must be made aware of and interested in the available occupationally oriented programs includes the board, administrative, counseling and teaching members of local public and private school systems.

Still other groups that must be kept well-informed in this developing area of education include state department of education staff members, university staff members associated with this type of education, labor union officials, and others.

With the acceptance of the concepts that increasing numbers and kinds of well-prepared technicians are essential and that there are sufficient commitments to educate these technicians, then the necessary financial, material and human resources must be provided to improve and expand existing programs and to enhance the development of newly emerging ones.

It is well-known that the cost is often much greater for implementing and operating technical education programs than for the academic curricula. The expense of equipping and maintaining specialized laboratories and the attendant low student-teacher ratio have long been deterrents to extensive developments of these technical programs. However, recent federal, and in some cases state, legislation providing funds for the development of such programs has in large part reduced this cost factor to the point where it should no longer seriously hamper the expansion and development of educational programs for the preparation of technicians. In addition, state and local agencies as well as business, industrial and professional organizations are becoming increasingly aware of their obligations to assist in the financial support of such programs and are making more significant contributions.

Thus, the availability of increased financial resources has greatly reduced the difficulties associated with the provision of adequate instructional materials and the necessary physical facilities to house them. Unfortunately, however, as is true in so many areas in education today, the material resources currently available are becoming outdated and are seriously lagging behind those now in use or being developed in the business, industrial and professional world.

Attention must be given to the new instructional materials that use the most recent advances in educational technology, including audio and video tape devices; overhead, rear view and cartridge projectors; computers; and other media. Specialized laboratory apparatus must also be developed to meet specific requirements for optimum educational value.

The remaining and perhaps most critical resource area to be discussed is, of course, that pertaining to the human element. Even if the necessary financial and material resources are available, little advancement towards the alleviation of the technician shortage will be accomplished without provision for increased quantity and quality of personnel to staff the institutions offering vocational-technical education programs. In institutions which have recently been trying to expand and/or develop new technical programs, the difficulty in recruiting even adequately prepared individuals has become all too evident. It is abundantly clear to those knowledgeable about vocational-technical education that immediate efforts must be made to meet this growing critical need for professionally prepared, career oriented administrators, counselors, and teachers.

The degree to which the previously discussed needs will be met will depend to some extent upon the accessibility of information and resource material related to technical education. At the present time, it is rather difficult for a student, an industrialist, a school administrator, a teacher of a cognate course or any other individual not well-oriented in technical education to locate such information or even to find out where it can be obtained. Although the number of pertinent publications is increasing, there seems to have been little effort in the past to assimilate this material and to make it conveniently available.

In addition to the need for a source of relevant text and reference books, technical periodicals, published and unpublished research studies, and other printed matter, it would also be desirable to provide a convenient source of other promotional and instructional materials such as: films, filmstrips, audio and video tapes, and so forth. These materials would then be made available to those interested in establishing new occupational programs, and/or improving existing programs.

In order to make a realistic attempt to provide the means for meeting the needs for technicians, it is mandatory that organized research activities be encouraged and implemented. Although as indicated earlier, there has been some increase in such activities, there is still a notable lag and lack of interest and productivity related to vocational-technical education research.

Since there has been so little research in this area in the past, and since there are so many areas needing study, some priorities for attacking the many problems must be established. The determination of these priorities is in itself a most significant investigation to be accomplished. Existing attempts to establish priority listings of various sorts must be studied and consolidated. Also, new attempts must be made to develop rank orders for research activities in the vocational-technical education field. Emphasis should then be given to those high priority projects which are most directly related to the objectives stated earlier.

The needs for technicians; for programs to prepare these technicians; for material and human resources for the improvement, expansion and development of these programs; for a materials resources center; and for research in technical education have all been discussed above in some detail. Also, mention has been made of some of the past and current efforts to meet these general needs through programs and projects that are designed to meet specific and therefore necessarily limited objectives.

Obviously, the results achieved in meeting specific needs through limited programs and projects all contribute to the solution of the overall problem. However, rather than depending on this current unorganized approach, it would seem far more desirable and effective to provide a comprehensive agency which would be concerned with the total complex problem as well as with the coordination and direction of the associated activities. The MTEC is attempting to serve this function by (1) constantly keeping in the forefront the general problem of meeting the needs for technicians as the ultimate goal, (2) identifying priorities and directions for the efforts to be expended on the various sub-parts of the problem, (3) stimulating the necessary activities and projects for attacking related specific problems, and (4) assisting in the provision of resources to implement these activities.

The MTEC has been organized and developed in such a way as to provide maximum effectiveness in meeting the needs for technicians. The various activities to be administered and coordinated by the Center include promotional programs, material and human resources development programs, material resources services and research programs. Although the emphasis in the promotional endeavors would be on local and regional problems, these efforts would necessarily have national implications. A field services branch of the center would be established to provide the necessary services to implement these activities. Examples of the kinds of activities anticipated include institutes, seminars, conferences, workshops and orientation sessions of varying lengths which would be established for acquainting various publics with the problems and potential of technical education.

The second major function of the MTEC would be to develop the material and human resources necessary to more adequately meet technician needs. As mentioned earlier, there is a tremendous need for the fullest exploitation of the potential advances in educational technology in all types of education. However, there are many who feel that technical education lends itself particularly well to the uses of newer methods and techniques. Some of us also feel that technical educators should be leading education in the use of new media rather than lagging.

Of the various activities to be undertaken by the vocational-technical education center, perhaps the most critical is the development of programs for the preparation of well-prepared administrators, counselors and teachers for institutions offering comprehensive occupational programs.

The immediate needs for technical educators are so urgent that short-range as well as long-range programs must be considered. Short-range projects to be implemented include in-service programs for faculty and professional staff who have only recently become involved with students in technical education programs. This type of service would be particularly helpful in newly established institutions offering occupational curricula and those older institutions which have only recently begun to include vocational-technical programs in their offerings. Pre-service internship programs would be instituted for administrators, counselors and teachers who are competent in their professional capacity but lack the necessary educational experience or background in career programs. These in-service and pre-service programs would be designed with sufficient flexibility to meet the requirements of the institution and of the individual candidates.

It is anticipated that the long-range needs would be met through the establishment of several specifically designed degree programs for administrators, counselors and teachers for occupational programs. These degree programs would be instituted at one or more participating universities and would use two-year institutions having extensive occupational programs as laboratories for the necessary practical experiences for the degree candidates. Participating comprehensive community junior colleges and other technical institutions would provide internship programs which would be an integral part of all such degree programs.

To meet the need for a readily accessible source of information and resource material related to vocational-technical education, a materials resources center would be established. As pointed out earlier, the three major functions to be served by this center would be (1) as a depository of educational materials and information relating to the promotion of and instruction in vocational-technical education, (2) as a source of information related to vocational-technical education, and (3) as a center for the dissemination of pertinent materials of interest to educators of technicians.

In any major effort to establish and develop programs for meeting particular needs, it is essential that the implemented research activities be related to and supportive of the objectives to be achieved. These research activities to be sponsored by the vocational-technical education center may be classified into two general groups: (1) studies and research projects of a general, comprehensive nature which would have national as well as regional and local implications and (2) those research activities more directly related to the promotional, material and human resources development, and the material resources center programs and projects implemented by the vocational-technical education center.

Significant progress toward the specific goals outlined above has already been accomplished. The pilot education programs and projects that have been implemented by the cooperating institutions have all achieved a sufficient degree of success to indicate the desirability of expanding them into full scale operation. One such program has already been funded with a $500,000 grant from the Ford Foundation for the preparation of teachers of technical students. This project is being implemented through the cooperative efforts of Southern Illinois University and the Junior College District.

In conclusion, it seems appropriate to emphasize two of the major strengths that are inherent in the concept of the MTEC as presented.

The first of these refers to the efforts of several major educational institutions to combine their resources in the unique and meaningful manner as set forth earlier. The demonstrated commitment of the four major universities and a comprehensive community junior college to form a consortium for the operation of a vocational-technical education center is most unusual and gratifying. Each of the institutions has indicated an area of interest that is complementary to the expressed interests of the others: The University of Missouri--preparation of administrators; St. Louis University--preparation of counselors; Southern Illinois University--preparation of teachers; Washington University--vocational and technical research; and The Junior College District--serving as a laboratory of the whole for the programs and projects instituted at the universities.

The second major strength to be emphasized is the integrated approach to the problems facing vocational-technical education. Each of the institutions mentioned above could independently develop programs and projects designed to meet the stated objectives and would, undoubtedly, serve the stated purpose to some extent. However, it is expected that a much greater degree of achievement will be possible with the multi-faceted approach of these cooperating institutions. For example, it is anticipated that the enrolled students of technical education: administrators from one university, counselors from another and teachers from a third, would all participate in a seminar during an internship experience at a community junior college. This would certainly provide unique opportunities for discussion and exchange of ideas and experiences. The research activities of the degree candidates would undoubtedly be stimulated by the availability of research materials at the Materials Resources Center as well as by the research programs being sponsored by the vocational-technical center. There would also be unusual opportunities for internship participants to be involved in the development of promotional and instructional materials and in some of the newer experimental approaches to instruction.

This integrated approach seems to provide an excellent opportunity for maximizing the effectiveness of each of the many activities related to the achievement of the overall objectives.

AAJC'S OCCUPATIONAL EDUCATION PROJECT

Kenneth C. Skaggs
Specialist in Occupational Curriculums
American Association of Junior Colleges, Washington, D.C.

The American Association of Junior Colleges has, for several years, been increasingly concerned that it place greater emphasis on its role of providing for studies, services, and help to the vitally necessary field of occupational education in the junior colleges. The complex technological and social changes now evident in our society, the demands of the nation for more highly skilled and trained workers on the technician and semi-professional levels, and the burgeoning population itself all are focusing emphatic attention on the need for the junior college to provide leadership and educational opportunities in these multiple and diverse fields.

In November, 1965, a financial commitment from the W. K. Kellogg Foundation made it possible for the Association to begin a specific program which would provide leadership in stimulating and assisting the development of occupational education in our junior colleges. Three new staff members were appointed to devote the major portion of their time to the programs emerging from the stimulus of the Kellogg grant and to emphasize the leadership role of the Association in these areas. These people are Lewis R. Fibel, in areas of engineering and industrial technology, Douglas W. Burris in business and commercial occupations, and K. G. Skaggs in health-related and paramedical occupations.

There are many programs that do not fit conveniently into the designations -- for example, programs for agriculture, urban planning, law enforcement, and many service occupations. The work and concern of the staff specialists will not be limited to the three major designations, and attention will be given as many program fields as possible.

There are certain common elements of concern that will determine direction and activity; these include curriculum and program development, leadership development, identification of information resources, and liaison with state and federal agencies, universities, individual junior colleges, foundations, professional and technical associations, and industry.

The objectives and purposes of the project are:

--To identify current and future needs in the areas of occupational education, both in the nation and in individual communities, and to suggest techniques and procedures to accomplish the necessary research and study;

--To provide for close liaison between and among professional organizations, agencies, and associations, and junior colleges, through the American Association of Junior Colleges, so that mutual understandings and acceptable relationships may be encouraged and articulation and coordination may be realized;

--To supply appropriate and acceptable articulation between junior colleges and four-year institutions;

--To encourage and aid junior colleges in the study, development, and implementation of occupational programs in relating to local and national needs, and to provide guidelines for such study, development, and implementation;

--To serve as a source of information to junior colleges for the establishment of programs and courses;

--To help in the identification of sources of financial support available to junior colleges in the study, development, and establishment of programs;

--To help in providing consultative services in the various areas of occupational education to junior colleges and to conferences, workshops, and institutes when requested.

The limits of physical and financial resources make it necessary that the activities and services of the project be provided to programs that will give aid and help to the greatest number of institutions or the greater number of people. Therefore, the work of the staff in state or regional conferences involving a group of junior colleges will be stressed. The staff will encourage the preparation of written materials that will be useful to junior colleges and they will also continually attempt to identify the research and study being made nationally in the field. Lists of consultants for every phase of occupational education will be developed and kept current so that junior colleges will have help and services available to them through such knowledgeable persons.

The major emphasis of project activity will be given to (a) stimulation and development of leadership in junior colleges for occupational program planning; (b) dissemination of information aiding sound and effective program planning; (c) providing sources of consultative services to junior colleges in the development and implementation of occupational curriculums; (d) participating in conferences, institutes, workshops, and meetings of group, state, regional, or national scope dealing with occupational curriculums; (e) establishing close working relationships with the federal agencies; professional organizations and councils, lay groups, and four-year colleges and universities, leading to effective and continuing articulation between these groups and the junior college.

PROGRAM

Wednesday, May 11

7:00 - 10:00 p.m. - Conference Information Center

Thursday, May 12

7:30 - 9:30 a.m. - Briefing Breakfast

Consultants
Discussion Group Leaders
Panel Chairmen
Reactors

9:00 - 10:00 a.m. - Registration

10:00 - 11:45 a.m. - Conference Orientation

MTEC COMMENTS
Douglas F. Libby, Director

AAJC COMMENTS
Kenneth Skaggs, Specialist in Occupational Curriculums, AAJC

CONFERENCE PROCEDURES
Richard C. Richardson, Jr. Conference Coordinator

1:00 - 3:00 p.m. - First Conference Session

Consultant - Edmund Gleazer, Executive Director
Topic: TECHNICAL EDUCATION AND SOCIETY

Panel Chairman - Amo DeBernardis, President Portland Community College, Oregon

Reactors - Raymond J. Stith, Associate Director, MTEC

Donald Deyo, Head, Master Plan Study, Massachusetts

3:15 - 5:00 p.m. - Delegate Group Discussions

Friday, May 13

8:00 - 10:00 a.m. - Second Conference Session

Consultant - F. Parker Wilber, President
Los Angeles Trade-Technical
College
Topic: TECHNICAL EDUCATION AND ADMINISTRATION

Panel Chairman - Lewis Fibel, Specialist in
Occupational Curriculums, AAJC

Reactors - Edward Kotchi, Dean, Occupational
Education, Junior College of
Broward County, Florida

Leland Baldwin, Chief, Bureau of
Junior College Vocational -
Technical Education, California

10:00 - 12:00 a.m. - Delegate Group Discussions

1:00 - 3:00 p.m. - Third Conference Session

Consultant - Norman Harris, Professor,
Center for the Study of Higher
Education, University of Michigan
Topic: CURRICULUM AND INSTRUCTION IN
TECHNICAL EDUCATION

Panel Chairman - Max Lerner, President, Lorain
Community College, Ohio

Reactors - Harry Bard, President Baltimore
Junior College, Maryland

Douglas Burris, Specialist in Occupational Curriculums, AAJC

3:15 - 5:00 p.m. - Delegate Group Discussions

7:30 - 9:30 p.m. - Fourth Conference Session

Consultant - Clyde Blocker, President, Harrisburg
Area Community College, Pennsylvania

Topic: STUDENT PERSONNEL SERVICES FOR
TECHNICAL EDUCATION

Panel Chairman - Kenneth Skaggs, Specialist
in Occupational Curriculums, AAJC

Reactors - Robert Turner, President, Macomb
Community College, Michigan

Walter Hunter, Associate Director, MTEC

Saturday, May 14

8:00 - 10:00 a.m. - Delegate Group Discussions

10:15 - 12:00 a.m. - Conference Reactions and Implications

David Bushnell, Director, Division of Adult and
Vocational Research, U. S. Office of
Education

Conference Adjournment

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CONFERENCE PARTICIPANTS

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* Discussion Group Leaders